THE MAGAZINE OF PROPHETIC FICTION

November

WONDER Stories

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Editor

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We know very little about the real potentialities of matter. There may be great civilizations that have found and utilized these potentialities far beyond our own conception.

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WONDER Stories

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ON THE COVER THIS MONTH

See the editorial of Hugo Gernsback on the editorial page for a description of this month's cover.

NEXT MONTH

"The Wreck of the Asteroid"
by LAURENCE MANNING

is the long awaited sequel to "The Voyage of the *Asteroid*" which appeared in the Summer 1932 Quarterly.

Mr. Manning continues in his realistic, and yet gripping and imaginative manner, the adventures of his three characters among the planets.

As a trained naturalist, Mr. Manning is well equipped to speculate on what the life of other planets might be like, and their peculiar natural conditions.

We have had many stories about explorations to Mars, and the hardships that men will face on that bleak, dead world. But few, we think, can match this story for the sheer imaginative flight of its author. The discovery of the remains of the former dominant race of Mars is a bit of writing that touches a high mark in science fiction.

"Space Rays"
by JOHN W. CAMPBELL, JR.

is a new and rather intriguing story by that popular author. Mr. Campbell probably had an unusual idea in writing this story. He not only has written a gripping adventure of space, but has at the same time put his finger on one of the weaknesses of science fiction.

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"The Planetoid of Doom"
by MORRISON COLLADAY

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ALSO THE CONCLUSION TO "THE DEATH OF IRON," HELD OVER, UNFORTUNATELY, FROM THE LAST ISSUE.

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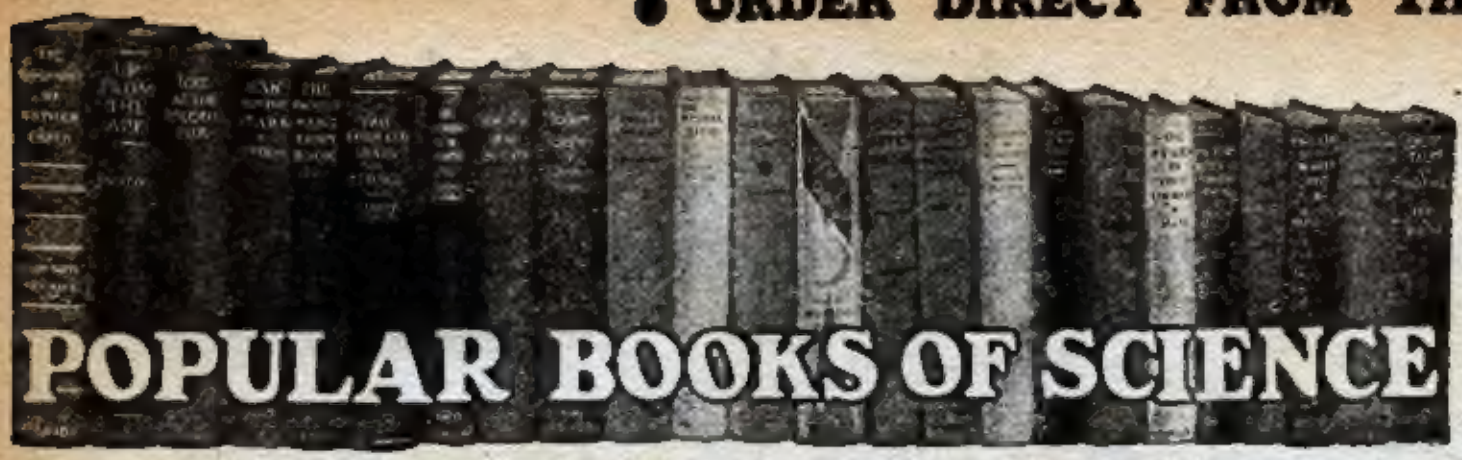

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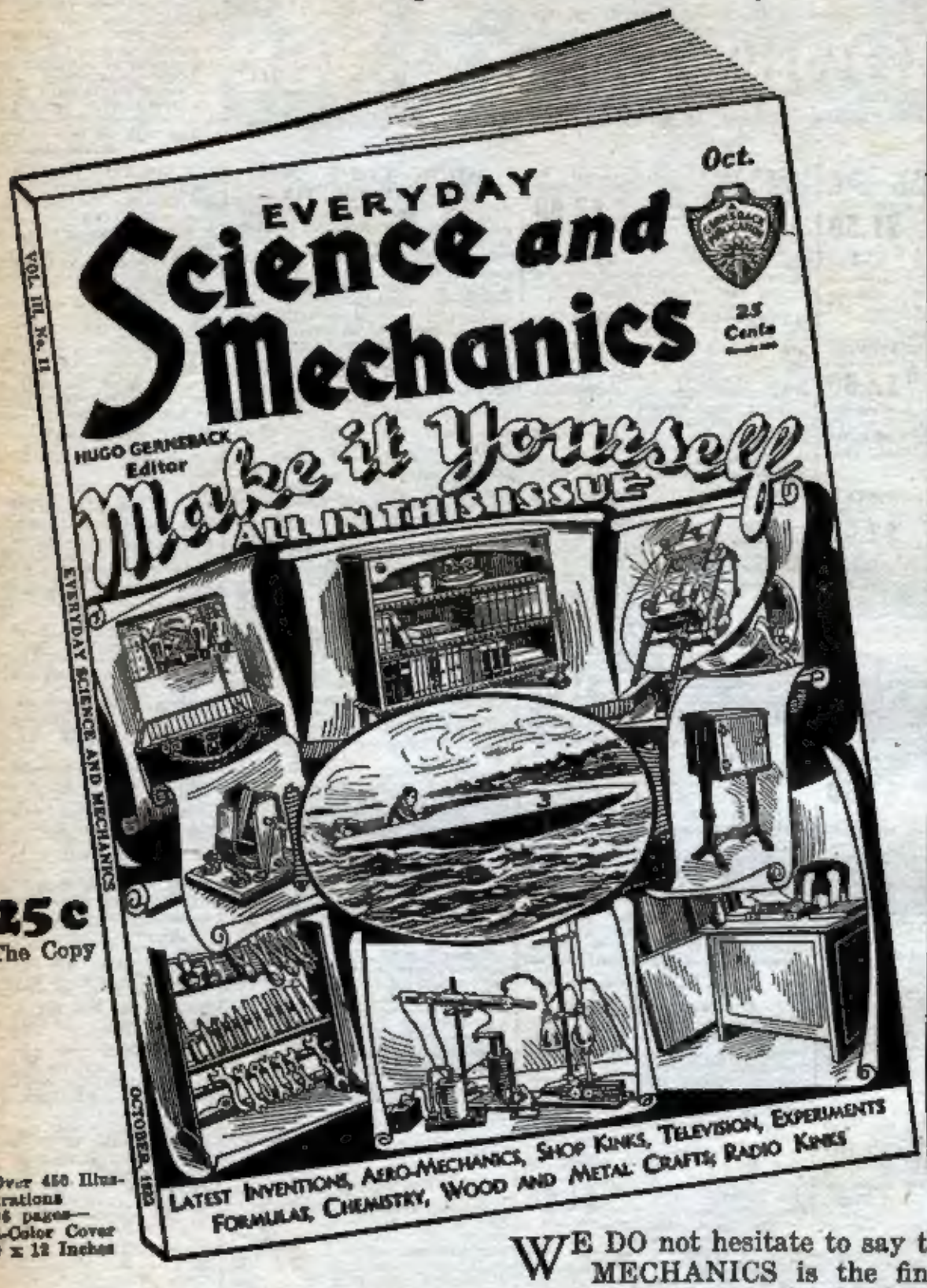

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EDITORIAL PAGE
NOVEMBER, 1932
Volume 4 Number 6

WONDER Stories

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WONDERS OF COLORS

(An Explanation of This Month's Cover)

An Editorial by Hugo Gernsback

To the thoughtful student of color phenomena, the most important factor, no doubt, is that colors are seldom what they seem. For instance, white sunlight is, of course, not white, but is made up of the colors of the spectrum, to wit: violet, indigo, blue, green, yellow, orange, red.

You can easily demonstrate this fact by breaking up sunlight through an ordinary glass prism; or, when you gaze at a rainbow, in which light rays are dispersed into colors through drops of rainwater.

On the other hand, there are colors which we cannot see. In the spectrum we thus have the ultra-violet rays which are located beyond the violet in the spectrum, and infra-red or heat rays, located at the other end of the spectrum beyond the red end.

Very few colors are what they seem either. For instance, a thin section of a green leaf looked at under the microscope is not green, but almost transparent, without color. The appearance of green is caused by the deepening of color of a number of layers. To bring this point home more graphically, that colors actually fool you and are never what they appear to be, this month's cover is a good example.

If you look at the usual magazine cover, you will see that it is made by what is termed the three-color process. Take a STRONG magnifying glass and look at the various parts of a cover (do not look at this month's cover of WONDER STORIES, except perhaps at the shield on the right upper corner). You will see a number of fine dots which the naked eye cannot detect. Thus you observe that red and blue superimposed on each other make violet; yellow and blue make green; and red and yellow make orange, etc. In the three-color process, using the colors red, yellow and blue the dots are so close together that you can no longer distinguish them with the naked eye. As a rule, on a magazine cover there are 120 dots to the inch (14,400 to the square inch).

When the engraver makes the cover plates he takes the artist's drawing and photographs it three times in succession. He does not take ordinary photographs but proceeds as follows:

Each of the three photographs is taken through a screen made of glass and ruled with fine lines, 120 to the inch. When he takes the first plate, which will be for the yellow printing, he uses in front of the lens a violet filter. This filters out all reds and blues and only the yellow in the painting is photographed.

Then the cover is photographed again for the red plate. In this he uses a green filter, which filters out all yellows and blues.

Then, for the blue plate he uses an orange filter, which filters out the yellow and red. He now has three photographs, which are then transferred on to three copper plates. There is a "yellow" plate, a "red" plate and a "blue" plate. Later on, when the printer makes the magazine cover, he prints the yellow plate first; on top of that the red, and on top of that the blue plate, thereby giving the various color combinations. Yet, if you look at any small section of the usual magazine cover, you will see it broken up into small dots corresponding to the colors above mentioned.

Then, where the red is printed over the blue we get a purple or violet. The closer the dots are together, the more deep the purple will be. The more the dots are "opened" the lighter the purple will be. This principle holds true with all the different color variations. It is thus possible, merely by using three colors, to get anything from black to the lightest yellow; black being produced by printing the three colors, yellow, red and blue on top of each other, without any screen at all.

In producing this month's cover, I used this principle in a way that it has never been done before. Take a magnifying glass and look at the "i" dot of the word "Stories" on the cover. To the naked eye it has a gray-bluish tint. Under the magnifying glass you will see a certain pattern made up of yellow, red and blue dots, with white in between. I had the engraver take this little "i" dot and magnify it exactly sixty times. This gave the curious pattern of large dots which you now see on the cover, each dot now being actually three-eighths of an inch in diameter. In other words, I took the original screen, which is 120 dots to the inch, and enlarged it sixty times.

Now, when you look casually at the cover, you will see the bewildering pattern of big dots; but prop up the magazine and walk 125 to 150 feet away (or according to your eyesight). Now again, you will not see the dots at all, because they will have vanished, and the background of the magazine will now appear greyish-blue, exactly as the little "i" dot appears to you under the magnifying glass. The reason for this is, of course, that the further away you go, the more the colors will merge into each other and combine with the white of the page to make a new color—grayish-blue.

If your eyesight is very good, of course, you will have to step back more than 150 feet. If your eyesight is not so good, you will have to come closer to the cover.

It is a most interesting exhibition of the wonders of colors, and, incidentally, I believe it is the first time that a normal three-color process screen has been enlarged sixty times. If the usual magazine cover measuring 11½"x8¼" were thus to be enlarged sixty times, you would get a cover 57½x42¼ feet or covering about 2500 square feet.

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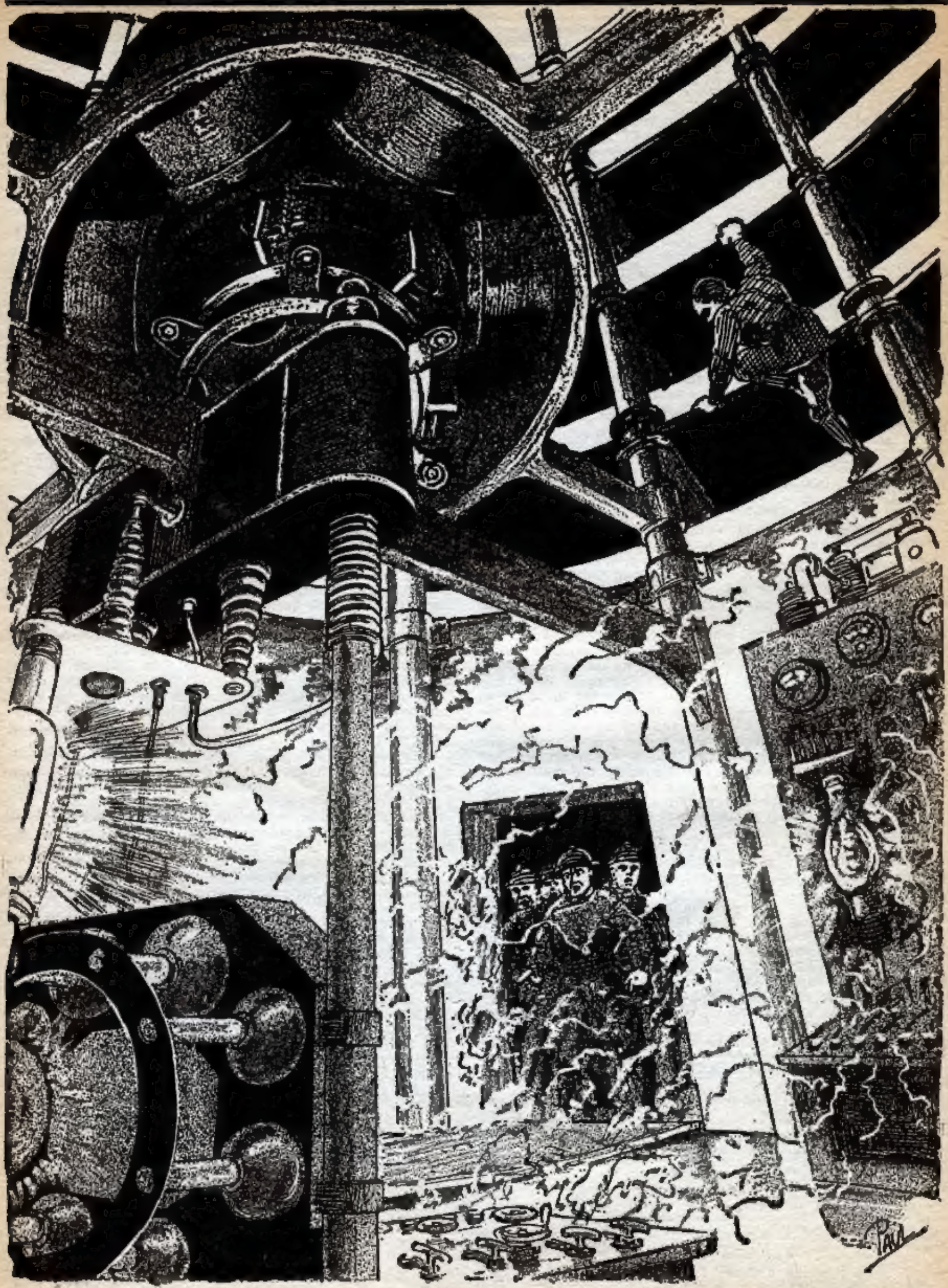

(Illustration by Paul)

In a second a dozen fires sprang up and the room was enveloped in greenish fog. The door buckled and crashed open

THE VENUS GERM

By R. F. STARZL and F. PRAGNELL

● Mr. Starzl returns to our pages as a collaborator in this powerful and gripping story of an interplanetary intrigue, with the fate of worlds as pawns.

Just as today powerful interests use races and nations as pawns in their game of power, so in the future their ambitions will extend to the wider sphere of interplanetary dimensions. Suppose, for example, that it were necessary for the life and happiness of all the people of the earth that a few powerful interests give up their domination of other worlds. Would they be philanthropic and do it; or would a merry battle be necessary before right and justice had its way?

Our authors answer in this unusual tale of two worlds.

● "The year 3976," declared the World Moderator, "will mark the end of human life on Earth—unless—"

Tensely they hung on every word, these governmental agents gathered at Paris. Each one knew the horrible truth of the Moderator's statement, yet they had been promised some ray of hope.

"Unless," the speaker continued gravely, "unless we can get help from the Venusians. That help is available—for a price."

"Give them their price!" exclaimed a dozen eager voices. But a few others, more cautious, asked:

"What do the Venusians want?"

"They want their freedom, unconditionally and without reservations!"

There was a stunned silence.

"But," rasped the member from South Africa, "our revenue! What will the interplanetary bankers say to this? How can we pay interest on our bonds without the Venus taxes?"

"The bankers have not been consulted in this case," the Moderator remarked flatly He was a tall, thin man, with a dry humorless mouth, whose tallness was accentuated by his thin, purple robes. "Our people are dying by the thousands. Millions have been attacked by the disease and will die within two months. I submit, for the benefit of the bankers, that dead people cannot pay interest either."

There was an uneasy silence. Since childhood these members of the governing class had been imbued with reverence for capital, for investments. But all of them knew, from personal observation, of an even greater horror. They had seen victims, slowly, inexorably succumbing, dying in agony. The Earth's greatest scientists had failed to cope with the malady. But just as the doom of the terrestrial race seemed certain, an offer of help had come from an unexpected source.

A man appeared in London—a man who had disembarked inconspicuously from an interplanetary freighter. He was a typical Venusian, possessed of opaque, snow-white skin, a slender body, the posterior half of which was adorned with a mane of short, seal-like hairs, the product of many generations of development in the water-logged atmosphere of Earth's neighboring planet. Yet he was as human as the terrestrial men, whose distant cousin he was. His forefathers had been marooned on Venus for political reasons, and this man's bearing, his fierce black eyes, his lean face, all proclaimed the born dissenter, retaining unimpaired the power of rebellion after centuries of oppression under Earth masters.

The Venusian had not long roamed the sunlit, *migraine* roofed streets of London before he was halted by a municipal guard, paralyzing cone at hand.

"Let me see your pass," the guard demanded. Gratuitously he added:

"It's the likes of you, ye crumpy sealbacks, that brought the plague to us!"

"I am Panco," the Venusian replied. "I have with me a remedy for the plague. Lead me to your city governor."

All this was known to the Paris convention. A new ray of hope; a new lease on life, came with the successful trial of Panco's remedy, and when its success was proved, and Panco was besought to quickly bring a larger supply, he made his staggering demand.

All this had happened several weeks ago, and was well known to every member of the world congress. But in common with deliberative bodies since the beginning of the world, this group could not deny itself a lengthy palaver.

The representative from the United States rose to his feet. He was well-fed, sleek, and wore bowed glasses which he now removed and polished with his handkerchief. His face was round, with a spurious expression of good nature, which concealed a flinty hardness. His robe made him look squat; the blouse and bloomers of the common people would have set off his figure better.

"Mr. Moderator," this gentleman inquired portentously, "has the time come when our great Earth must yield to the demands of foreign radicals? Must we strike the glorious green banner of our great globe before the slave hordes of Venus? If we have been surprised by the foreign fiends who planted their foul germs on our fair planet, must the price of safety be shameful surrender?

I care not what the cost in lives; I care not what the cost in treasure—NEVER shall we yield!"

The speaker sat down amid thunderous applause. The televisor men in their alcoves grinned at one another with good-natured contempt. They knew the gentleman had made his speech for the millions at home, rather than for the congress. There were a number of sharp clicks as the clerks slipped new coils into their recording machines.

Another member was on his feet—the skinny, freckled member from Canada. He had gray, stiff hair, a rather wide mouth, and a sardonic manner of speaking.

"If the Moderator please, I would like to correct an error that has been introduced, unintentionally, no doubt, by the gentleman from the United States. We know, for a fact, that the Venus germ was *not* introduced by the Venusians. I wish to introduce into the record the deposition of Dr. Varnof, as reported to the Siberian department of health."

● At one end of the senate chamber a section of the wall slid back, disclosing a background of velvety black. Invisible to the audience, an operator now slid a record coil into his machine, and the blank space took on the illusion of reality, in three dimensions—so real, that from the chamber it would have been impossible to distinguish the difference.

The scene was a laboratory, and in the immediate foreground were racks of test tubes ranged around a work table, with microscopes and other equipment used by bacteriologists. A bent, bald-headed man in a laboratory apron, whose back was to the audience, now turned, holding a test tube in his hand. He spoke in a dead, expressionless voice.

"Because I was cured of the Venus plague by the serum that Panco brought, I am able to confess that it was I who let the Venus germ loose on humanity.

"First, for the benefit of scientists who will work with me in an effort to find a cure, I must explain what the Venus germ is. It is, then, a most highly developed microbe, small but powerful, that nevertheless was perfectly harmless as originally brought to Earth for experimental purposes. I need not explain to you gentlemen how a harmless germ can become virulent. Take the gentle colon baccilus, harmless and even useful—yet what a death-bringer when it invades the vermiform appendix!

"I experimented with the Venus germ, which lived a quite harmless existence in a kind of Venusian water rat. It was quite interesting, especially for the ferocity with which it attacked all kinds of body cells. Yet it died itself within a very short time. I was trying to develop a variety that would attack cancer cells only—"

Varnof gazed at the test-tube before him with loathing. It was filled with plain water for the recording dramatization, but to him it recalled vividly his fatal accident.

"With the aid of x-rays and radium I forced endless mutations, and at last produced a variety that for ferocity was unsurpassed. I was eager to experiment, and in my haste I dropped the test tube on the floor.

"Frightened, I mopped up the floor with mercurochlor, burned the bits of test tube, and my clothes. But somewhere I must have overlooked a tiny spatter, and in a few days my assistants and I felt the first symptoms of the disease—a persistent malaise, weakness, a high fever. I was one of the favored few to be selected for Panco's test, but I suffered the anguish of seeing other victims progress through periods of steadily increasing pain, to air hunger, to convulsions, to madness, before death brought relief!"

There was a click, and the scene vanished. The silence was broken by the member from Canada.

"Now I wish to introduce into the record the statement of Panco to the London governor and his board."

Obediently the clerk changed record coils, and the figure of Panco appeared, with the rich background of the London Government House. The Venusian spoke in a rather sharp voice, with patriotic fervor.

"To you, our masters of Earth, we offer this remedy in exchange for our freedom. Is it too much? Then Death will free us anyway!

"Our vassalage brought its compensations, the greatest of which were advancements in the sciences (save those of war and space travel) which were permitted us. With Dr. Varnof's record of mutations before us, it was a simple matter for us to concoct the synthetic serum which you have seen at work. It will save you from death; is our own freedom too much to ask? Recall your Controllers, our overlords; order away your Patrols; and in exchange Venus will supply an unlimited quantity of the life serum!"

There was a hush after the conclusion of the Panco record. Molgan, member-at-large, and special representative of the interplanetary bankers, rose to his feet and spoke for the first time. He was tall, spare, with keen features and piercing blue eyes. Suave and controlled in what was to his interests a dangerous situation, Molgan addressed the Congress.

"It was absurd," he began winningly, "for such a distinguished group as this to indulge in jingoistic accusations against our subject planet. We concede, gentlemen, that the Venusians, apparently, were not responsible for the introduction of the plague. But gentlemen, they certainly took advantage of it in a decidedly unsportsmanlike manner. When helpless victims are writhing in their death agonies, they come to bargain! Gentle women languish and die; children become pale, hectic, cry out in agony. And these cold-blooded Venusians bargain for a political advantage!

"Gentlemen, have you considered what recalling the Venusian patrol means? It means that a revenge-hungry planet will turn its science to armaments! It means the development of new and terrible weapons. Of what good is liberty unless it gives opportunity to seize power?

"Regarding the Venusian revenues. Do you realize that many of the Venus bonds are held by widows and orphans? Cut off the revenue and you cut off their livelihood. Let us not—"

"They won't miss it, Mr. Molgan, after they're dead!" A member interjected brutally. There was a rising chorus of cries from the members, of whom a few, though protected by secluded palaces towering high into the clean skies, had already had members of their families stricken by the dread plague. In a resistless surge of aroused fears, the Venusian exchange was put to a vote, and carried overwhelmingly.

● In a secluded room in the London Government House, Panco had watched the whole proceedings in a telestereo. Now he was on his feet, exultantly pacing the length of the large, windowless chamber. Glenn Haye, captain of the Interplanetary Flying Police, rose from the

lounge on which he had been sprawled. They formed a striking contrast as they shook hands, mutually congratulatory—two striking young examples of the best that either planet afforded. Panco, pale, yet exuding vitality; Haye, browned, hard of muscle, with flashing white teeth, long muscles rippling under his uniform.

"You've done it, Panco!" the Earthman grinned. He sobered.

"I have your promise that Virla will be one of the first?"

Panco smiled, his luminous eyes alight.

"My friend, I would get serum for her, even if the agreement failed. As it is, the delay has been costly. It will save her much needless suffering if we take her with us to Venus. Thus she will be the first of all Earthlings."

Haye left the chambers with singing heart. From good-natured contempt, which he shared with most of his fellows in the I. F. P., he had come to have a warm admiration for the oppressed Venusians. The unscrupulous financial powers had been careful that no sympathetic understanding be allowed to spring up between the common people of Earth and the serfs of Venus. But in Panco, Haye had recognized all the manly qualities that men admire. If he was white with an unearthly pallor, his handclasp was warm and strong. Even the sleek black mane, revealed by back-straps in the Venusian's robe, no longer seemed repugnant.

The young officer leaped into his helicopter, which was parked on one of the terrace roofs, and the machine mounted rapidly, speeding over transparent domes that covered all of London. Swiftly he passed over the near suburbs, until he came to a region where the *migraime* domes became fewer, disclosing pretty country villas, brilliant in the English summer sun. Toward one of these modest estates he directed his flight, settling to the ground on a graveled landing plot set in the middle of a lawn. He presented his face to the small lens of the photoelectric door opener, dialed the number of his control picture, and was rewarded by the click of the lock.

Striding through the familiar rooms, he came to one from which a nurse had just come.

"Is she awake?" he asked eagerly.

"She's awake, but no better."

Haye pushed open the door. A blast of hot air met him, and the windowless room was dimly lighted by the glow of the heat panels. The girl in the bed turned her head, her face pale as a silver wedge in the mass of her long, dark hair. Hints of exceptional beauty still remained in her drawn features, in her slim form under the thin coverings. Her glad smile, as she turned on a small bedside light and recognized her visitor, quickly changed to one of concern.

"You shouldn't have come! You may be infected!"

"Don't care if I am!" Haye smiled broadly, though a pang shot through him as he looked at the girl he loved. She looked like a person who had starved for days. "The Earth has consented to liberate Venus," Hayne continued reassuringly, "and Panco is taking us both with him. In a few weeks you will be as well as ever."

She only half comprehended, for the lassitude characteristic of the first stage of the disease was upon her, and Haye burned with a fierce impatience to be off, with her, on the special Venus ship.

"It is so hot here," Virla complained.

"Soon it will be over," Haye assured her. The heat, he knew, was necessary. It conserved the body's resources, minimized the drain of the fever which seemed to be its only defense against the invaders.

Leaving the sickroom, the officer went out into the garden and found the girl's parents. He found them dismayed, indecisive, but obtained their consent to Virla's removal. Then back to the city, to supervise preparations for the hasty trip to Venus.

CHAPTER II

Toward Venus

● Haye was pleased with the *Thunderer* when he saw her in her scored and excoriated launching pit. She was squatly cylindrical, with an uncompromising blunt bow, and blending with her hard metal sides were serried ranks of the new Blandix atomic rockets. With such power a trip anywhere in the solar system would be a mere joy ride, involving no complicated mathematics. A government ship was the *Thunderer*, sacred to interplanetary junketers. When she belched the terrestrial treasury sank perceptibly. Equipped with meteorite repellers, hydraulic shock absorbers, automatic course checkers, she inspired confidence in the beholder, and her technical perfection filled Haye's heart with joy.

The pit was swarming with humanity, and the great loading cranes, traveling on their circular tracks around the pit, were filling the air with the din of their warning bells. Coleson, one of her mates in the Civilian Interplanetary Service, spied Haye and came running.

"Just received notice, sir," he addressed Haye, "that you would take command instead of Captain Hurst, who is down with the plague. Are there any orders?"

"Carry on, Coleson. Who is the other mate?"

"An astrogator named Harton. I hadn't met him before. He was master of one of the bullion ships. A comedown for him, eh sir?"

"Very funny!" Haye agreed musingly. "How did he get on, and how does he take it?"

"Cheerful enough. And I guess his appointment went through government channels."

"Very well. Carry on, Coleson."

When the mate had gone about his duties Haye frowned thoughtfully.

"Molgan's hand is in there somewhere," he said to himself. "Even when there's no profit in sight, that crowd likes to be represented."

A hoarse shout of warning recalled Haye to his senses. Looking up he saw the tiny figure of a crane operator fleeing from his flaming control cab. There was the rending of metal, and the gigantic structure slowly toppled in a majestic arc that would end just where Haye was standing.

His leap was a marvel of agility, yet he was barely missed by the crashing wreckage and whipping cables. The operator had fallen to the lithocrete, and was picked up dead.

The municipal police took immediate charge, and a technical expert examined the wreckage.

"The control panel was completely fused, probably by a heat ray."

"A pencil ray?" one of the officers asked, looking over the crowd suspiciously.

"Nothing so small," the technician declared. "This was

a big one, such as the law allows only the government. It may have been anywhere." He waved his arm in a circle to take in the billowing *migraine* domes on all sides of the launching pits.

"A government beam?" Haye thought. That meant there were powerful forces bent on preventing the carrying out of the Earth-Venus agreement. The wrecking of the crane may have been intended to wreck the ship; perhaps the captain had been considered worthy of murder also. Haye decided to move to a less exposed position.

Sitting in the shade of one of the machine sheds Haye found a friend of his college days, Clayburn Wyke, now one of the best known telecasters of the planet. Despite the heat of the day he looked cool and collected in his thin blue blouse and bloomers. His gleaming metasilk stockings were rolled down to his calves, exposing sunburnt knees.

"Have a rest, Glenn," Wyke invited, kicking forward a small metal keg.

"Lazy as ever!" Haye remarked, accepting the seat. "Did you see what happened at the pit?"

"I never rubber with a crowd out of working hours," Wyke drawled. "But I know what happened all right. Look around and see if anybody's listening."

Half amused, half exasperated, Haye made the requested search. He found no one.

"Now, out with it, if it isn't too much of a strain. You have a way of getting inside information. What's behind this?"

"I guess what's behind it is gold and credits," Wyke replied, still listlessly. "I have it from a source that is reliable in all matters except expense accounts, that the interplanetary bankers are going to try to wreck the *Thunderer*."

Haye nodded grimly.

"I think your source is right this time. And lay the blame on the Venusians! What's the matter with them? Don't they realise their own lives are threatened?"

"A financier," Wyke drawled, "is very optimistic in all matters except security and interest. Why should they fear the plague out there?"

He nodded toward the distant horizon, where glittering ramparts of *structule* and *migraine* shouldered the very clouds. Filtered air, strict sanitary measures would indeed make those uncrowded palaces fairly safe. And then, before Haye's eyes, Wyke fell asleep.

The officer leaped up, suddenly comprehending. Not even Wyke's laziness could account for this. He was in the first stages of the Venus plague. First his fiancée, now his friend, were stricken by the insidious disease, and there were men whose callous selfishness would doom the whole world rather than to give up an advantage.

● ● ●

It was an hour before Haye returned from the hospital. He could not accommodate any more sufferers on the ship. He was back in time to meet the ambulance that was bringing Virla, heavily swathed in electric heaters and blankets. The crowd recoiled when the white helicopter with the red cross on it hovered overhead, scattered quickly, for the dread of the plague was upon them all.

Tenderly the suffering girl was carried to the isolation room in the big ship. Panco was waiting there, helped to make her comfortable. Her nurse too, arrived, and as the evening star rose, final preparations were made for the launching. Panco looked toward the brightness of Venus with longing, as he stood beside Haye at the thick ports.

"There is my home!" he said softly, "and we shall be free!"

Busy with the launching, Haye barely had time to speak to Harton, the second mate, whose post was in the base of the ship, where he was entrusted with the important duty of equalizing the thrust at the base of the rockets. He seemed to be highly competent for, when Haye, once they were clear of the Earth's shadow, yielded his controls to one of the astrogators of his crew, he found it unnecessary to make the usual corrections in their course.

Now, however, Harton came up to speak to him. He was of middle height, with an air of ruthless efficiency. A man true to his salt, Haye conjectured, but to whom did Harton consider his loyalty due?

"Any further orders, sir?" Harton inquired.

"None. Take your regular watch; that's all."

Worn with his duties, Haye went to his stateroom. He adjusted the artificial gravity regulator in the room to one-fourth power, and so, almost floating, drifted luxuriously off to sleep.

Haye did not know how long he slept, but when he was awakened he felt considerably refreshed. Although he was in an outer tier of the ship, the port hoods let in only the merest glimmer of the blinding sunlight in space. He sat up in his bunk, peering around the little room for the source of the noise that had disturbed him. Haye had confidence in that mysterious sixth sense that protects men who live dangerously on the frontiers of the solar system. He had not identified the sound, but he was convinced that peril was near at hand, and so he strained his eyes and ears.

Then he heard the sound again. It was the faint metallic tinkle of a chain-belt such as were worn by ship's officers—nothing alarming in itself. That is, nothing alarming if accompanied by heavy, honest footsteps, but the wearer of this belt was evidently trying to remain undiscovered.

Very softly Haye slid to the floor. He was barefoot, clad only in his thin sleeping unionalls. He took up a position beside the door and waited grimly.

But after several minutes he became uneasy. Whoever the mysterious prowler was, he did not seem to have any designs on the ship's master. The door was not locked. It could be easily and silently opened, but the lever did not move.

Haye tried the lever himself. It worked smoothly. Just as he was starting to pull the door slightly ajar there was a muffled exclamation and the sound of a struggle in the adjoining stateroom.

Haye ran out into the narrow corridor. It was dark; someone had unscrewed the tubelight. But through the opened door of the next room came the unmistakable sound of battle. Dashing in, Haye could dimly make out two struggling forms on the floor. The bottom one, by his white skin, must be a Venusean. Panco! Haye had forgotten the stateroom assignments. Panco was giving a good account of himself, but the issue would have been doubtful just the same.

Haye crooked an arm around the sweaty neck that bent over Panco. The man gagged, came up. Just at this moment Panco let go with a violent kick that caught Haye in the side. His hold slipped, and the assailant was gone.

"What—did—you do that for?" Haye gasped.

"Sorry!" Panco was badly winded. "Sorry, my mind was clouded."

"What did that fellow want? Who was he?"

"I couldn't say. I awoke. Something cold on my upper lip. No smell at all—just that icy spot there. I opened my eyes. I could just see somebody standing there. Seemed to be dropping a drop at a time of some liquid on my lips. Was a little dazed anyway, but I seized him."

"And a good thing for you. Now we'll see what that was." Haye turned the port hood screw. The reflected sunlight from a gleaming atmospheric vane just outside filled the room with a harsh glare.

"Just as I thought," he said a moment later, picking up a small metallic object. It was a small phial, swung on gimbals within a frame so that no matter what position it was carried in, the phial would always hang right side up.

"A lethelene flask," Haye commented, examining the thing. "Just another of those ingenious methods of murder that modern science has brought us. Lethelene can't be stoppered—it forms gases—hence the special flask. The I. F. P is well acquainted with the stuff, which is outlawed by the interplanetary pharmacopoeia. If you breathed the fumes for about fifteen minutes you'd be dead, and any physician would find that you had died of acute dilatation of the heart. This must have been your assassin's first job, and his inexperience saved you. Had he laid a small sponge on your lip you wouldn't be living now."

"The two planets can learn from one another!" Panco remarked drily. "*We* evolve compounds to cheat death; the Earth to deal it!"

● Captain Haye immediately ordered the assembly of the entire crew and passengers, excepting only the sick girl, in the gymnasium. Silently he looked them over. Most of the faces showed blank lack of understanding. Harton, who was naturally suspected, wore his usual look of glum efficiency, now overlaid with an expression of impatience.

Haye decided to take the first mate, Coleson, into his confidence. He drew him to one side, explaining what had happened.

"How about finger prints on the flask, sir?"

"There were none. I know why too; just as I had the fellow by the neck he threw up one hand and jabbed at my face. He had gloves on."

"Do you want Harton searched?"

"What good would that do? But after this, watch him! *Watch* him!"

A number of days passed without further untoward events, and as the ship swiftly put the millions of miles behind her the tiny disc of Venus gradually increased into a great, soft, mist-enshrouded globe of beauty, dazzling in the sunlight. She was off the port bow, hastening to her trysting place with the ship on the space lanes as decreed by mathematical formulae. Despite the attempt to preserve secrecy, the story of the attempt on Panco's life became known to the crew, and each man unobtrusively constituted himself his guardian. The suspicion on Harton was not lifted, and he received many a dark scowl. But it was in the man's imperturbable nature to pay no attention, and to perform his duties with his usual dour efficiency.

Daily Haye went to Virla's room, whenever his duties allowed, to keep his vigil. His heart was wrung by the sight of his beloved sinking gradually lower under the ravages of this implacable disease. He pictured to himself the remorseless though slow multiplication of the Venus germs in her helpless body. In his mind's eye he saw the savage attack by those ferocious microbes upon Virla's blood corpuscles. He saw her blood stream befouled with broken hemoglobin, destroyed, so it appeared, for the sheer lust of killing.

He visioned again, as he had seen on the microscope slide, the brave but useless battle of the phagocytes, never retreating, always advancing their thinning ranks upon the destroyer. In the end, he knew, the body could no longer keep up the supply; then would come the final agony, the sucking of great gulps of air, the excruciating pain in all the bones. The thought sickened him, but he could not help pursuing it to the end; to the final issue when the girl he loved would fail to find relief even in death; when her contorted body should be deprived of all semblance to humanity—this girl who had been so beautiful.

"By God!" he said fervently to himself, as he sat in the sweltering sickroom, "they can't stop me!"

Then he would go over every inch of the great ship, laboriously check all calculations, so that he got little sleep, and eventually wore himself to a haggard nightmare. The men watched him apprehensively, and Panco sometimes made him take a little rest, almost by force.

As the beautiful globe of Venus gradually became larger, it seemed that they would land without further mishap, despite the general forebodings. Haye determined to place Harton under arrest and to put him in manacles if he gave the slightest cause for suspicion, but the second mate's behavior was unexceptionable, and without some reason such an act of arbitrary authority would increase, rather than eliminate, the general apprehension. Panco now carried a paralyzing cone, and kept his stateroom locked.

CHAPTER III
Arrested!

● The great day dawned. The *Thunderer* was falling nose down toward the surface of Venus, and the retarding rockets were already in play. In the control room the instruments were swung on their mounts, so that the men could work them, standing on what had until then been their ceiling—thick, transparent arches of the material known as *migraime*, transparent as quartz, tough and malleable as duraluminum. The infra-red localizers were set on the cloudfields, their penetrating rays ready to find certain landmarks. In this the astrogators were aided by Venus' periodic tables, which told them approximately where to probe, and by magnetic indicators, which pointed to the planet's north and south pole.

Captain Haye was in personal charge, as became the commander of a ship at this crucial moment. A serious error, and they might still miss the planet entirely, skimming back into space like a meteorite. Or worse still, strike the surface like one. Now he spoke to the man at the signals.

"Retard 3400 U. Retard 3500 U. Retard 3700 U. Retard ——"

The man swung the big lever so that a pointer stopped

at the indicated number on a dial. And immediately another pointer on a twin dial moved to the called for number, proving that the rocket thrust was being applied as ordered. Suddenly, however, the signal man spoke with nervous hurry:

"She's not obeying the calls, sir!"

Sure enough, there was a rapidly widening discrepancy between the twin dial readings. Immediately afterward the man at the drift indicator called, without removing his eyes from the instrument.

"Ship's yawing sir! We're being deflected from our course!"

The deflection was so rapid that in a few seconds it was already apparent to the unaided eye. With a smothered oath Haye bounded to one of the corridor doors. It was slammed open, almost in his face, by the first mate, Coleson. He was bleeding from a jagged cut over one eye, and his head was clotted with blood.

"That dammed Harton is up to something, sir!" Coleson panted. "I stood by him as you ordered. He was very meek and mild, sir, trimmed the base rockets and the course nozzles in a way that was very fine. And then all of a sudden he clips me with a pin-wrench. When I came to I couldn't see him. There's something ugly afoot!"

Not pausing to answer, Haye dashed down the corridor, or rather, up the corridor, for the deceleration of the ship was now more effective than its artificial gravity. A number of the men not occupied with the instruments dashed after him, heat pencils or paralyzing cones ready.

Arriving in the base control room, Haye saw with sinking heart that his worst fears were confirmed. It was hardly more than a pit, this room, with the walls crowded with inertia measuring instruments, and a bank of handwheels geared to the motors which in turn operated the rocket activating circuits. A glance at the voltmeters told the story. Every one of them was at zero. The circuits were dead.

A manhole was open. Through it one might gain access to the bewildering array of pipes, conduits and cables that formed part of the ship's vast nerve system. Haye was familiar with this labyrinth in a general way, for all men of the I. F. P. were exhaustively instructed in all matters pertaining to space travel. He knew that under the present circumstances the open manhole led into a death trap, where lurked an enemy of interplanetary accord, bound by some queer fanatical bond to the masters of money. Would Harton sacrifice his own life to prevent the success of the Panco mission? Haye believed so, and bitterly he regretted the doubt that had swayed his own inaction in Harton's case.

Waving aside the protests of his men, Haye climbed through the hole, holding a little atoflash before him. The light was set in a ring which he wore on his finger, leaving both hands free. The brilliant beam illuminated a dusty wilderness of mechanical devices, given strange shapes by the necessity of packing great power into small space. Presently he came upon the severed ends of the control cables, and repaired them. A moment later he felt a lurch, and thought with satisfaction that the men were again able to avert disaster. But he had no way of telling whether or not it would still be possible to prevent a crash, and as he crawled about he expected at any moment to feel the rending shock that would be followed by immediate oblivion.

In the meantime Harton was still at large somewhere, capable of great mischief, and Haye clambered about in search of him. He squeezed between the inner and outer walls of the ship's skin. The outer wall was covered with ice and bitterly cold, so that wherever his skin touched it became immediately numb.

● Reaching the next level, Haye switched off his atoflash. By a process of elimination he reasoned that he would find Harton somewhere along the hollow interior of the central truss, that formed, in a manner of speaking, the ship's backbone. Behind him he now heard others of his crew taking up the search. They were calling to him and to one another, and that would serve to drive Harton toward him, if he were not already there. Haye breathed easier. The very fact that he was still alive proved that the astrogating officers had the situation in hand.

He crawled about a hundred feet further, pausing every little while to listen for sounds, but without success. While a space ship in free flight is absolutely silent and unstrained, the *Thunderer* was now decelerating and was undergoing enormous stresses that made themselves audible in her dark bowels as groans and creaks that kept up incessantly. Haye had obtained no inkling of Harton's whereabouts when he saw the beam of an atoflash held by someone crawling through a conduit about thirty feet away. The man shouted.

"That you, sir?"

Haye blinked in the glare. Directly ahead of him, not ten feet away, was Harton, his saturnine face streaked with sweat and dirt. He had an evil looking knife in his hand, and had evidently been engaged in stripping insulation off one of the main power circuits. The gleaming copper bar, as big around as a man's leg, was bare, and near it was its mate. A short circuit here would utterly destroy the ship!

Harton had the light in his face, and was blinded longer than Haye, who had time for a flying tackle. With one hand he grasped the man's wrist; his other arm around his waist. He battered the knife hand against the girders until Harton's fist was covered with blood, and the knife went rattling down an angle brace.

"Now you scum!" Haye panted. "It's manacles for you in the Hole. And consider yourself lucky if the admiralty court doesn't sentence you to a push out of an airlock. You there, with the light—come here!"

"Yes, sir." This proved to be one of the cargo stewards. He helped truss up the sullen and helpless Harton, and together they lugged him back to the base control. The dials were now flickering, and the youngster who had taken charge said they would land in half an hour at the north polar space port of Gernser. It was an important port; one of the largest on the planet, with a population of over two million Venusians, living under the jurisdiction of an Earthman governor with a staff of some ten thousand Earthmen, who were, to prevent fraternization with the subject people, replaced every few years.

Haye was dismayed when he saw Virla under the gray, cloud-screened light of Venus. On the ship, in the half-darkness of the hospital room, under the rosy glow of the heat panels, she had not looked so bad. Now her pallor and emaciation were shocking.

She was placed in a hellcopter ambulance and hurried to one of the hospitals. Here she was placed in a large room, without windows, with a beautiful vaulted ceiling of translucent green, and given the first injection by Panco himself. He was joyful, exalted by the prospect of early independence for his people.

The city of Gernser was in gala attire. It was a far-flung metropolis, covering the green hills and valleys of Venus' north pole country. The buildings were for the most part low, with arched roofs and buttressed walls, each one done in an array of sparkling colors that made the city look, from a height of a few miles, like scattered gems. Each house was surrounded by walks and drives of crushed purple rock, and all vistas were landscaped. Vegetation, because of the tropical climate, was luxuriant, and to Haye and his men it seemed a veritable paradise.

Only one thing marred the perfection of affairs. And that was the attitude of the governing staff. The Earthmen, who filled all important public offices, as well as all financial positions, seemed unexplainably truculent to Haye. Their intolerance of the Venusians seemed unnatural to him, who, as a member of the Interplanetary Flying Police, mingled with many strange races throughout the solar system.

After Panco had made arrangements with his brother scientists for an immediate beginning of large-scale production of antitoxin, he invited the Earthman to make a tour of inspection of Gernser. Haye gladly consented, appreciating the opportunity to stretch his legs. The air was heavy with the exilarating odor of Venusian flowers, and when they walked through the numerous parks the bruised grass underfoot gave off spicy smells.

Several times they saw at a distance the peculiar patrol cars used by the Earthman administrators and police. These consisted of small bodies, entirely covered with hoods of *migraime*, which permitted vision in all directions, yet were unbreakable and gave protection from missiles or rays. They rode on single, fat pneumatic tires, gyroscopically stabilized, and had, in the ornamental belt about their middle, the new Sydheimer levitators which enabled them to float in the air if desired. After several hours, however, Panco remarked:

"I've never seen so many police cars before. They seem to be following us."

"I've noticed that. Something looks rotten. I presented the orders from the Congress to Governor Dills, and his actions were peculiar. I'm afraid we're in for trouble."

They were favored, for the moment, by the fact that the park they were in was densely covered with trees.

"Let us run along this alley," Haye suggested, starting on a trot. The Venusian followed, lifting his robe and wrapping it around his hips. Men and women stopped and looked wonderingly, then, as they glimpsed the police cars, fled in panic.

● The fugitives were now forced to cross a street. On the other side they dodged through an arched portal, found themselves in a sort of plaza surrounded by apartments. The shadows of pursuing cars flitted over the shrubbery. They wheeled and returned, settling lightly on the purple crushed-rock drives.

"This way!" Panco snapped, seizing Haye and pulling him into a corridor. They ran up this hallway. Here and there they glimpsed the black manes of Venusians as they slipped into their rooms after trying to satisfy their curiosity about the disturbance. Out in the court there was shouting as the police efficiently threw out their drag-net.

Just as it seemed that they might get away after all, the fugitives were surprised by two of the police who had come up another corridor. They were bristling with weapons.

"Halt!" barked one of the men.

In their hands they had slender heat pencils, deadly at close range.

"Better stand!" Haye said aside to Panco. "But they'll pay for this!"

The guards now came forward, expertly searched their prisoners for weapons. The Earthmen were hard specimens, with obvious contempt for all Venusians, and the same regard for Haye because he associated with them.

"Will you tell me," Panco inquired with still white anger, "why you are molesting us?"

"Coil the chatter!" one of the guards advised him roughly, shoving him ahead.

The two prisoners were herded out into the court and loaded into one of the small cars. Beside the driver, there was another man who kept his pencil steadily upon them.

"Where are you taking us?" Haye demanded. But he was accorded no answer.

The *migraime* hood, which consisted of movable segments, was turned over their heads, and the machine rose silently. Swiftly it moved through the air. Down in the streets they could see occasional Venusians, their white faces contrasting sharply with their brilliant robes, looking on curiously, but presently they attracted no more attention at all.

In a few minutes they were in an entirely different section of the city. This was obviously the government center, for the buildings were larger, and of a more ponderous architecture, than in the rest of the city.

"If we're under arrest," Haye said sharply, "why don't you take us to one of the main entrances?"

His guard shrugged indifferently, but Panco remarked, with a weary smile,

"It's evident they don't want the public to know about this. See, they're going to take us down one of those back passages."

The group of buildings which belong to the government center was set on a slight elevation which was accounted for by outcroppings of glossy black rock. The architect had taken these into consideration, and the whole hill presented a blending of the natural and artificial that was pleasing to the eye. The ship was now slowly drifting toward a natural chasm in the rock adjoining the back of the biggest building. As they got closer the prisoners could discern a paved walk in the bottom of the chasm. It was ornamented in brilliant colors, a natural development on Venus, where the sun rarely breaks through the clouds, and where the light of the never-ending polar day varies little.

The car alighted, and the prisoners were conducted through a subterranean passage into a maze of underground galleries, most of them cut through the now familiar black, glossy rock.

"I fear we shall never get out of here alive," Panco said to the Earthman in a low voice.

"There will be some others, then, who won't either," Haye promised grimly.

"It was in this building," Panco continued, "that Larkon and his patriots disappeared."

Haye knew a little of the story. He had seen the official version, a few years ago, in the teletabloid dramatizations. This popular form of propaganda, which was far more effective than the spoken or written message, had depicted Larkon as a scowling, repulsive degenerate, with pale blue blotches on his leprously white skin, his crooked hands dripping with the blood of murdered Earthmen. Charged with resisting arrest, he had been summarily executed. He wondered what teletab actor would impersonate him, Haye, the Renegade Earthman.

"But it may not go that far. After all, the terrestrial assembly has signed the compact," Haye reminded Panco.

"Don't be too sure!" Panco retorted gloomily. "There are powerful interests against the liberation of Venus. From the first it was plain that the Controllers here would hinder all they could, even as your second mate interfered on the ship, and would have even sacrificed his own life. Don't forget that over the constitutional government of your Earth there is a super-government of finance that dictates most important appointments. To this super-government our Governor Dills and his Controllers owe their position. Wouldn't they do all in their power to thwart the will of the people, if it is opposed to the wishes of the interplanetary bankers?"

CHAPTER IV

A Strange Message

During this conversation they had reached a magnetic lift, and now they were whisked to a corridor that seemed to be high up near the top of the building. However, there were no windows, so that Haye could not be sure. The guards opened another door, and pushed their prisoners through.

They stood alone in a moderate-sized room, lighted through a translucent white ceiling that was beautifully decorated. On one wall was an expensive planetarium transparency; on another was the Venusian charter, engraved on a huge slab of native iridescent marble. The room was obviously the private office of some high official.

Seated behind a huge desk sat a man with a round face that was superficially pleasant. His hair was silvery at the temples. He had the straight nose and piercing, small-pupiled blue eyes that one associates with a certain type of politician. It was far less pleasant now than when he posed for the teletabs, and his hard eyes glittered dangerously.

Haye advanced a few feet and said coldly:

"This is a peculiar way to receive an officer of the terrestrial government, Governor Dills. I sent you my credentials, and it has pleased you to ignore them. Then you send out your thugs to unlawfully arrest me and a leading citizen of Venus. Be assured that you will repent this when the terrestrial congress hears of it!"

Dills smiled wintrily.

"Before we go on, Haye," he said in clipped accents, "it is well for you to know that, although I appear to be helpless and unguarded, I can sweep the entire space before this desk with paralyzing rays, from lenses set in the walls, merely by pressing a button with my knee.

"Under the circumstances, we can talk. And as there is no teletab apparatus in the room, we can be frank."

"A rare enough occasion for you!"

"Quite!" Dills smiled wintrily again.

"What are you going to do?"

"We expect that we shall have to kill you, Haye. I am being humane in relieving you of that uncertainty at once."

"And I—" Panco declared bitterly—"I will be charged with his murder!"

"Justice must be done!" Dills pronounced with mocking gravity.

Panco turned to Haye:

"A not unusual expedient, captain! Imagine the fury that story will arouse on Earth, when it is enacted in the teletabs! Imagine what it will do to the Liberation!"

Haye could well imagine. Although he had sometimes doubted the authenticity of such propaganda, he had himself felt the stirring of hate as some alleged atrocity of subject races was enacted. Memories came to him of half-forgotten incidents; the tales of wretched fugitives whom he himself had caught and turned over to the courts; the scrawled diary he had found in the frozen hut of a mystery hermit on Eros. He saw in them, now, further evidence of the super-government, ruthless, criminal, with murder part of its stock in trade.

"Are you telling me, Governor, that you are willing to give millions of human beings to death in order to secure the profits of your masters?"

For the first time Dills was stung. He colored slightly and ignored the thrust.

"The reason I had you brought up here, instead of letting the men attend to you at once, is because, under certain conditions you may be granted the boon of easy death, instead of a painful one."

"The price," Haye snarled, "is further treachery, I suppose?"

"Some of my men have an unpleasant way of executing the death sentence," was Dill's ominous reply. "In the face of that fact it is hardly politic to bandy words. Now, on that small table you will find a photoprinted statement. It will simplify our work if you will copy that, in your own handwriting, on the metaparchment which you see there, as well as a stylus. By so doing you will save yourself considerable suffering."

Haye picked up the stiff sheet and read:

> From: Capt. Glenn Haye, I. F. P.
> To: Controllers, Venus.
> Subject: Treachery.
>
> Having been sent to Venus to carry out the terms of the Liberation compact, and to secure the certainty of the anti-plague remedy, I was captured by a group of natives, including Panco, and am held in a Venusian laboratory whose exact location is unknown to me. I fear that I will never get out alive, but that I will be murdered and my body thrown into the street somewhere, to give the appearance that I was murdered by robbers. For this reason I am using this opportunity to write this message, which I will conceal under my clothing where it will be found if my body is discovered. I request that I may be set adrift in space on an independent orbit around the sun.
>
> CAPTAIN GLENN HAYE,
> Capt., I. F. P.

Haye gazed at the sheet in disbelief, almost stupidity. Fiendish and cold-blooded murder was not unknown to the I. F. P. But he was thinking of the sheer effrontery and simplicity of the scheme. He could visualize the

wave of rage and renewed hatred against the Venusians that would sweep the Earth when that diabolical message was found. The failure of the Liberation compact would be foredoomed. The vassal planet would be hedged in with still more brutal restrictions; its gentle people more cruelly oppressed. A sidewise glance showed him Panco's stricken face.

Immediately another thought drove all other considerations from his mind. He thought of Clayburn Wyke in his terrestrial hospital ward, with many other victims. He thought of Virla, with the first of Panco's anti-toxin already at work in her veins making the deadly Venus germs sluggish and less harmful. With himself dead, and Panco on the way to execution, there could be no hope for Virla.

"Well," Dills asked coldly, "will you choose the easy death?"

Haye leaped like a released alpha particle, straight for the desk behind which sat the cold-blooded governor. He tensed his muscles for the spring, and in that instant they failed to respond to his will. He collapsed in a heap, and his reeling senses left him. Dills had pressed the button in time.

● When consciousness returned, Haye felt himself being carried by four Earthmen through one of the subterranean corridors through which he had passed before. They were lugging him along in a businesslike way, a man to each of his arms and legs, with his head hanging down so that his throat felt strained at the adam's apple, but he lacked the strength just yet to hold it up. In this inverted position he could see Panco striding ahead between two burly guards, one of whom had the Venusian's short mane in a vice-like grip.

Presently they reached what was evidently a prison cell, and into this Panco was pushed. But when the guards tried to enter the door they found it too narrow. Thereupon one of them growled:

"Let me handle the fellow alone." Haye felt himself lifted in wiry arms, and so they passed sidewise through the narrow door. The room was small, indifferently lighted by a wornout emanation tube. In one corner was a metal cot, and into this the Earthman tumbled Haye's inert body.

"Lay there, you blasted traitor!" the man snarled. At the same moment his knotty fingers opened one of Haye's hands, pressed something small and metallic into his palm, and closed the fingers upon it. The officer lay supine as the guard went out and noisly slammed the door, which was securely locked from the outside.

When they were safely gone Haye sat up and examined the token that had been so mysteriously given him. A thrill of pride and hope shot through him as he recognized it. It was a small lapel button bearing the blue comet which was the insignia of the I. F. P.!

So the I. F. P. knew his plight—had a representative in this nest of mercenary traitors! That knowledge was joyous and unexpected, but entirely credible, for of the thousands of that redoubtable organization who patrolled the solar system there were many who did not wear the uniform, and who were entirely unknown to their colleagues and to fame as they threaded their solitary way through danger and intrigue.

Almost immediately, however, doubts assailed him. The mere possession of the button did not prove that the guard was really an I. F. P. It might just as well signify just another trap, just another angle of the interplanetary plot.

To Panco, who was pacing their little cell in an agony of despair and apprehension, he confided his hopes, but not his doubts. The Venusian, though possessed of many admirable qualities, seemed to lack the Earthman's ability to absorb punishment. His strength must be conserved, and his liberty must be won, or the lives of Virla and millions of other helpless victims were forfeit.

Haye would have felt less hopeful had he known who the man was who had pressed the I. F. P. comet in his hand. For that man was not a member of that far-famed interplanetary police organization, and his act had been impulsive—a mere whim—nevertheless the fate of a large part of the entire human race now depended upon him.

Gray was his name. The powerful politico-financial group which had employed him knew nothing of his history. It did not need to, for the cardiopsychic method of selecting personnel, developed in 3241, gave a far more unerring index to a man's character. And Gray's readings had shown a bitter animus against society as a whole and against Venus in particular.

Twenty years earlier Gray had been a recruit of the I. F. P. His youthful enthusiasm and real adaptability had promised to send him far along the road to achievement and success. He had been chosen as special messenger to carry confidential and important communications between certain terrestrial commercial interests and their Venusian representatives. One such message, accepted and receipted for by Gray in good faith, proved to be a blank coil when placed in the reproducer on Earth.

Gray was charged with having stolen the real coil and substituted a blank for it. He knew better; soon realized that the whole affair was a conspiracy between the terrestrials and their Venusian underlings to defraud the stockholders, but upon Gray alone rested the blame. He was convicted and sentenced to five years on the prison planet, Ganymede. Upon his release he became a tramp, wandering from planet to planet, until at last he became one of the Controllers of Gernser.

Only one vestige of his old loyalties remained; an ineradicable though furtive affection for the old Service.

So it came that he had the badge of the I. F. P. with him when the opportunity came to press it into Glenn Haye's hand, and almost immediately afterward, with bitter self-scorn, he wondered why he had done it.

Alone in his small stone cubicle, Gray fought the battle out with himself, and at last, still with a trace of self-scorn, he announced his decision:

"I'll do it! If I get killed there won't be much lost. Just another bum! But I'll give what's left of my worthless life for just one crack at old Dills!"

Gray's plan of operation was simple. If he could reach the nearest I. F. P. depot, he could count on that redoubtable organization to take care of the situation. He knew where it was located, having once been quartered there himself; about a hundred miles to the south, on the high rocky plateau overlooking the Endless Sea.

He made his preparations with care. He put a new atomic cartridge into the little paralyzing cone which would slip into his pocket; did the same for the slender heat pencil that the Controllers were always expected to carry in the little loop at the belt of their tunic. He

dressed with extreme care, roaching back his graying hair, and applied a depilatory cream to his face, wiping his beard off, so that his appearance became trig and apparently youthful. Surveying himself in a little mirror, he grunted with satisfaction, and went out, closing the door after him. He did not intend to enter that room again.

Gray did not, however, leave the Government group by any of the regular pedestrian entrances. Instead he followed an underground corridor until he came to a sort of courtyard that was open to the sky. Although the sleeping period, or "night" was approaching, the steady, unchanging glare of the polar sky still presented itself. There was no sun visible, of course, and no stars.

The courtyard was the principal launching place for the flying gyrocars. Here they could float directly up and over the city. Around the court were the metal doors, each one closing one of the stalls in which the cars were kept. A sentry, his cheeks bulging with mercelite, the intoxicating chewing gum, leaned indolently against the wall.

"Ha, there," Gray hailed this fellow, "how would you like to make a month's pay?"

"How would you like to say how to make it?" the sentry queried suspiciously. He had a little too much of the gum, and his eyes did not focus properly.

"Let me take one of the cars for a few hours. There's a handsome little sealback waiting for me. The less time I take getting there and back the more I can spend with her."

"Wouldn' work!" the sentry demurred. "You know the radio ranger is at work all the time. If one of the gyros was missin', the serge might notice it on the board any time."

"Well say!" Gray began ingratiatingly, stepping forward. His big fist caught the sentry on the jaw, and he became limp. Gray grasped him about the waist and dragged him to the nearest door. Being designed only as a protection against the weather, it was not locked, and in a few moments Gray had the unconscious guard inside, and was fumbling with the automatic radio ranger. It was true, as the guard had said, that this device, sending out waves at all times, would infallibly indicate the exact location of the car on a map in one of the Controller offices. Gray took it off, ruthlessly cutting bolts and metal, and set it on the floor.

"Go ahead and range your head off!" he apostrophied the machine. "Tell 'em at the office that this car's sitting right here."

He started the gyro, and when it was emitting its thin high whine, pushed the car out of the door. There was little danger of his being seen, but he kept his heat pencil handy. He was lucky that he did so, for the unexpected happened. High up, silhouetted against the sky, stood an officer on the edge of the roof.

"Who's that down there?" he shouted angrily. "Where's that subburned guard!"

A spot just ahead of Gray's foot was glowing redly on the stone pavement. The officer had his heat pencil trained ready for the slight shift that would spell death.

"He's missing, sir," Gray shouted. "I noticed the car here. Was just looking at it."

"Stand where you are! Officer of the guard! Officer of the guard!"

That would finish it! Haye leaped into the car, pulled the *migraine* segments up. The heat pencil could not penetrate them!

But the officer was quick. Instantly he trained his pencil on one of the metal hinges. It became white hot, stuck. The segments were immovable. The officer had spared him so far. He did not want to destroy the car, but now the red ray was shifting along the edge of the segments. In a second!

But he did not have that time. Gray's own heat pencil stabbed out and up. It missed. Finger on the button he whipped the beam across the officer's chest, saw a puff of smoke from his scorched uniform. With his left hand he pulled the Sydheimer lever, and the machine floated lightly upward. The officer on the roof was lying flat, bent on killing this time, when the car floated past. But Gray spotted him first, took a quick snap aim, and was rewarded by a hoarse cry. The officer rolled over, jerking convulsively.

CHAPTER V

A Dash in the Skies

● Down below the court was swarming with men, and Gray realized that in a few minutes the air would be swarming with his pursuers. He gave the Sydheimer levitator all it could stand, and the car shot skyward. In a few minutes it was enveloped in soft, luminous mists.

Immediately the fugitive was all alone. There was no hint of the populous city of Gernser below; no hint of pursuers. The clouds blotted them all out, and Gray concentrated his attention on the problem of finding the I. F. P. post.

The gyroscopic compass was useless, for here, at the pole, all directions were south. Haye knew, however, the direction in which he would have to go, and having noted the position of the compass in relation to the terrain just before coming into the fog, he now headed in what he believed to be the direction at full speed. In a few moments he judged that he was well out of the limits of Gernser. He kept on a few minutes more, and then allowed the car to sink. Staying just beneath the cloud ceiling, he anticipated no difficulty in finding his way.

He noted with increasing uneasiness that the ceiling outside the city seemed to be very low. Continuing to drop, until he feared at any moment to be entangled in the top of one of the 200-foot thorn trees so common on Venus, Gray searched eagerly for some sign of the ground.

The car was floating without power. Now and then it seemed that vague shapes passed by, but never close enough for identification. There was evidently no hope of getting a bearing here, so Gray again rose, and drove southward at full speed for a few minutes.

This time, he decided, he would land if necessary, and wait until the fog lifted. The car was protection against all but the largest carnivores, and the pain of the heat pencil discouraged the most hardy. Slowly he drifted toward the ground.

Suddenly he had the sensation of riding in space. The pleasure of the cushions on his body ceased. The car was falling free!

Thoughts passed quickly through Gray's mind. With a kind of abstraction he heard the whistle of the wind through the half-closed segments, wondered how far he was falling. With lightning speed his mind found the answer to another problem. Why was he falling? Because, no doubt, the power broadcasting station had been

shut off, after all cars had been warned to the ground. His own car, ironically enough, could not be warned, because he himself had taken off the automatic radio.

The gyroscopes continued to whisper along on their own momentum, holding the car steady as it fell.

It was as if time stood still during the few seconds of that fall. Gray sat quite calmly in the car, not moving, but many things passed through his brain. Then a crash blotted out everything.

* * *

Back in his solitary cell Glenn Haye lay on his cot, waiting for some further word from his mysterious friend, and across the little room was Panco, the Venusian. Panco had been unwilling to be hopeful. He was of a race accustomed to oppression and the thwarting of hopes. Nevertheless Haye listened for any sound that might give a hint of what was transpiring. The excitement occasioned by Gray's escape had in a subtle way permeated the group of great buildings and their underlying maze of galleries, with no human contact save each other and the occasional passing of a guard patrol, the prisoners were aware of it.

Haye got up and walked over to his Venusian friend. He patted the sleek mane of short, black hairs, saying in a low voice:

"That fellow—that guard—I think he must have escaped. He will have sense enough to go to the nearest I. F. P. post, and if we're still alive when the I. F. P. comes, Dilla is going to be a pretty sick ex-governor."

"I fear not, my friend!" Panco sighed. "The Controllers have to deal with deserters every once in a while. One of their number falls in love with a Venus girl, perhaps, or is bribed by a group of the wealthier patriots. But in some mysterious way these men always come to grief. None has even succeeded in defying the governor."

For some time Panco recited instances in point, and with growing apprehension Haye thought of Virla.

"Panco, when should she have the next injection?"

The Venusian gave him a compassionate glance.

"She should be getting it now."

Haye paled. He walked to the door grating. It was very solid, and did not even rattle when he shook at it. The rest of the cell was cut out of the solid rock which was black and harder than terrestrial obsidian. There was not the slightest hope of breaching those walls, which were probably several feet thick.

An idea struck him. Moving his bunk, he climbed up and attempted to remove the wornout tubelight. If he could find a source of electric energy, he might contrive some kind of radio disturbance—a sort of code in static. But this elementary expedient had been well guarded against. The moment he turned the tube there was a bluish flash. With the tube out he felt in the socket, found it dead. A special fuse arrangement had been provided by the astute Controller electricians for just that purpose.

Haye returned to his bunk in the corner and sat down in almost total darkness. Loth as he was, he was forced to the conclusion that the life of Virla, the lives of millions of human beings, depended on an unknown man whose promise to help was merely implied by the passing of an old button.

When Gray awoke he was surprised to find himself still alive. The sturdy little car with its enormously fat pneumatic tire had absorbed a terrific jolt, and it had not escaped unscathed. The *migraine* segments were broken off, hanging over the side in a twisted mass of wreckage. Even the fine platinum loops of the Sydheimer belt had broken through their casing and hung down in forlorn festoons. This Gray could see without moving his body or head, which lay deep in the cushions. In fact, he recognized in a moment, with a thrill of fear, that he could not move. The concussion had jarred his spine so severely that his muscles refused to obey his will.

Gray had no idea of the time that had passed since his fall. The car was still standing upright. That meant that it could not have been more than four or five hours, as by then the gyroscope would have run down and permitted the car to topple over.

● He listened for the shrill whisper of the high-speed flywheel now. But the shrillness had gone out of it. It hummed musically, but it must have already lost a great deal of its speed.

By a great effort, Gray turned his head and was able to survey the country around him. The fog had lifted, so that the ceiling was twelve or fifteen feet high. Nearby was the thick trunk of a giant thorn tree, whose lacerating branches the machine must have missed by only a few feet. Those deadly thorns were lost to view now, obscured by the fog, which glowed with a sulphur yellow light, instead of its usual pearly luminescence.

Of the city of Gernser there was nothing in sight. Nor indeed was there any evidence of the fertile country that surrounded the metropolis. Here the ground was barren, covered with boulders, and here and there were broad outcrops of milky white rock.

All these features were well known to Gray. Even the gradual rise of the ground toward the south proved that he was on the great plateau which ended abruptly with the cliffs of the Endless Sea, upon which was perched the I. F. P. station which was his goal.

Suddenly he gasped. His tongue, which also seemed paralyzed, rolled in his mouth as he emitted an incoherent cry. He made an agonizing attempt to sit up, and failing, stared over the side of the car at the creatures he saw there.

A stranger unacquainted with Venusian fauna would not have seen in them anything terrible—this pack of plateau *girlings* which surrounded the car. They were rather appealing little creatures, with their round, fat bodies, covered with downy yellow fur; with their comic stick-like legs upon which they walked upright on little round pads of feet. Their front feet, which they held close to their breasts, were armed with bright vermilion claws, but these claws, of which there were three on each foot, were not disproportionately long.

Their round heads were furry, with ears like a bear's, and their eyes were large and unearthly like a lemming's. Only their snouts gave a hint of their true character. They were long, narrow and upturned. Their teeth were broad, flat and sharp, turned edgewise to the jaws. And their nostrils, instead of being at the end of the snout, were up close to their eyes, where they would not be clogged by the blood of a victim!

There was no telling how long the girlings had been surrounding the car. They could not climb in, and even their teeth could not dismember the metal so as to bring their victim in reach. They stood patiently, silently, their luminous eyes fixed on the head of the man who stared back at them. There was no haste in them, and no rage;

only a wistful patience, as if they had some special knowledge that their meal would come to them in time.

For a long time they stared at one another—the intended meal and the hopeful diners, while the yellow fog swirled overhead, and the gyroscope hummed musically.

With a start of horror Gray remembered the gyroscope. Running in molecular bearings, it could run for a long time after the power was shut off, but it must stop some time. Now as he listened anxiously it seemed to him that it was already humming at a perceptibly lower pitch. He thought he could already detect tremors in the car's body.

Thirty minutes more, perhaps, it would start wobbling, using up the remnants of energy stored in the spinning wheel, and then—

He closed his eyes, but he could not close them to a vision of his helpless body being dismembered, in a matter-of-fact, unhurried way; the bloody fragments being methodically cut up by shearing jaws, to be carried to the *girlings'* hungry broods in their lairs.

In a moment the car began once more to wobble, throwing Gray's helpless body around. This time the gyro could not save him. Ever more erratic became the movements, each one costly to the rapidly waning energy of the flywheel. Suddenly the car leaned far over—did not recover—went clear down, amid a thin metallic clatter of twisted *migraime* segments.

Gray closed his eyes. But in a few moments he opened them in wonder. He was still alive, and the *girlings* had not reached him. They were working patiently at the strips of *migraime*, which barred their way in a tangled mass. Those who wanted to bite them through were doomed to failure, but others had already started bending them, one at a time, to clear an opening for their bodies.

Gray closed his eyes again, and did not open them this time until the metallic gnashing of teeth stopped. When he did, it was to see a flash of steel and the dropping off of a snout. Somebody was attacking the *girlings*.

His shout of joy emerged a mere gurgle.

The rescuers were men, Venusians, apparently, but of a different breed than those in the cities. Sturdier, these were, with massive white legs that flashed back and forth past the car in pursuit of the *girlings*. As Gray watched he saw one of these giants catch a *girling* and split the vicious little beast in two. He did not see another one of the creatures sidle up from behind. In a moment the man was down with a roar of pain. Blood was spouting from the stump of his leg, cut off above the ankle. The *girling* picked up the severed foot and started off on a hopping lope across the plain. But it had not gone far before a heavy, short-handled mace, hurled by someone out of Gray's line of sight, caught it in the back and burst it open.

The injured man was lying on his back, groaning, and some of his companions were binding the stump tightly with strips of soft animal skin that they cut off of their garments. Gray saw them more clearly now, Venusians of a powerful mold, with heavy blue-black beards that contrasted markedly with their dead white skin, and manes that were coarser and thicker than Panco's. Drops of dew glistened on the coarse hairs. Half savages, these men were, yet possessed of a nobility of bearing, an air of independence and strength that was attractive.

● Strong hands ripped away the interlaced *migraime* barrier, and a fierce, yet handsome face looked in. Gray lay huddled in the bottom of the car. The Venusian reached in with a long arm, and hauled the Earthman out.

"He is injured!" he said, in the common interplanetary tongue, but his inflection was different. His words were burred and guttural.

He laid Gray out on a patch of soft plateau moss, frowning thoughtfully. At last he said thoughtfully;

"My name is Garald."

Gray tried to answer. His faculties were slowly returning to him. He could move his limbs a little, and the tips of his fingers and toes were smarting. But the thickness of his tongue was such that he was only able to mumble an unintelligible reply.

"Take him to the village," Garald commanded. He seemed to be leader of these men, who had been out hunting.

The Venusians obediently picked Gray up, though some of them scowled as if the job were distasteful. Others picked up the man who had lost his foot, and so they left the scene of the fight.

Their path led downward, coming presently to less rocky soil, which supported a forest of giant thorn trees. Their tops were hidden by the fog, but Gray knew that their interlaced boughs, armed with wicked, glittering thorns, would afford partial shelter against spying aircraft. The path wound among the great, knobby trunks, past clumps of bushes whose berries of bright blue burst at the slightest touch and gave off an overpowering aromatic odor that was like balsam many times intensified.

They were in the village before Gray realized it, so perfectly did the buildings blend with the natural landscape of tree trunks and rocks. This was no accident, but deliberate planning. Garald now directed that the Earthman be taken to one of the largest buildings, a long shed which was evidently a council chamber as well as communal dining hall. A number of comely Venusian women, scantily clad in soft, peacock-marked skins, stared curiously until ordered out.

Gray, released, struggled to a sitting posture. He had a terrific headache, but he attempted to speak;

"Friends," he began, "I—"

Garald interrupted him.

"You call us friends, and you wear the livery of the oppressors?"

There was a rumble of applause for this rebuke.

"I am your friend," Gray insisted. "I was on my way to the I. F. P. to save one of your race, and his friend, when I crashed."

"Who of our race?"

"Panco." And Gray told as much as he knew of the plot to prevent the liberation of Venus.

"Panco is a great man," Garald conceded. "But he is a fool for trusting the Earthmen. Better to let them die; then they would leave Venus alone."

"They may die for all I care," Gray said flatly. "I risked my own life to help a man of the Interplanetary Police. Once I was one of them, and you have no cause to hate them, since they never molested you."

"That also is true," Garald again conceded. "But you have not the uniform of the I. F. P., but of the Controllers, who are our enemies; who have made us outlaws. We have seen their cars, trying to search us out, and you now say you are our friend. You lie!"

CHAPTER VI

Treachery

● Gray looked around him at the circle of stern, savage faces. These were Venusians of an entirely different stamp than the gentle creatures of Gernser, and he read death in their eyes. Gray was not a man to fear death, especially a swift and merciful one such as he could expect here. He had made a mess of his life anyway. But nevertheless the cold sweat stood out on his forehead and the backs of his hands. But his voice was steady as he made his plea for life;

"Panco is in danger. If I save Panco, do I deserve death?"

There was a scattering chorus of reluctant "nos."

"Bring the latest coils!" Garald commanded.

After a little delay they were brought, and an ancient and outmoded reproducer was set up to repeat what had been picked up by the newscast machine. Gray thought of a new peril:

"Remember, the broadcasts are not always true. The propagandists tamper with the truth."

"Hope, then, that they have not tampered too much!" one of the men grunted ominously.

The newscaster's voice stilled all other conversation, and for a half hour they listened to inconsequential things. Then came the announcement that Gray, having had some hint of what to expect, most dreaded to hear;

> "The terrestrial representative for the Liberation, Captain Glenn Haye, who has not been heard from for forty-eight hours, is still missing. The Controllers are scouring the city of Gernser and environs for his body, as it is feared that he has become the victim of some Venusian revolutionary.
>
> "Suspicion has been directed against Panco, one of the leaders in the Venusian revolutionary movement. Panco was seen walking with Haye toward Fragrant Park, long suspected of being a center of the Venusian revolutionary faction. Governor Dills declared this morning that he would report this treachery to the terrestrial Congress, and that it would probably end the hopes of the Venusian revolutionaries of obtaining the withdrawal of the Controllers.
>
> "In the mean time, Gradus Gray, one of the most trusted of the Controllers, has started out on a solitary reconnaissance in an effort to find some of the hidden villages of the Venusian outlaw bands, who may be holding Captain Haye a prisoner, if he has not already been murdered—"

Gray groaned inwardly. The propagandist's statement was the first time he had been told that he was more than the lowest caste in the ruling Controllers. How diabolically simple! They knew that he must have been forced down in the outlaw belt. With callous opportunism they were now leaving it to the outlaws to kill him, should they themselves be unable to capture him!

"Don't you see it's just a trick?" he cried appealingly to the circle of bleak, resolute faces around him. "They knew you'd intercept that broadcast. They wrecked my car by shutting off the power wave. They knew you might pick me up, and all this is for your benefit, to induce you to kill me."

"Stop your lying mouth!" Garald replied coldly. "The Controllers do not suspect that we have a radio. They consider us nothing but savages, because we live like savages; hence it would be foolish, from their point of view, to make a lying broadcast for our benefit. We believe them no more than we believe you, but the circumstances are against you. I now call for the verdict of the tribe."

Like the sullen murmur of the breakers against the cliffs of the Endless Sea came the chorus:

"Death!"

"Wait, Garald!"

All eyes turned to the youth who now detached himself from the council circle and took the center of the floor. He was obviously one of this hardy race, powerfully muscled despite his appearance of slenderness and obvious youth. His beard was still fine and soft, as was the mane down the center of his broad back.

Intoning a formula, Garald said; "Habal is brave and strong; let all respect Habal's word."

Habal looked at the older men around him with mingled respect and self-assurance.

"Let us not be hasty. What this Earthman says may still be the truth. If he lies we may still find it out, and kill him then. In the mean time we may test his words.

"He says he is on the way to the Interplanetary Police with a message from Panco and Haye. We know the Interplanetary Police are fair. Never have they joined with the Controllers in their persecution of the Venusian patriots. Only the presence of the I. F. P. has prevented the complete extermination of some of our cities when they were slow in yielding dividends.

"Now I propose to carry this Earthman's message to the Station myself, while he is kept here a prisoner. If he lied, kill him later."

Gray's hopes, rising, were dashed again when he saw how the young Venusian's plea was being received. When Habal finished there was a roar of disapproval.

"Kill him! Kill him!" the men shouted.

Garald patted the young man's shoulder.

"Habal has fought the mighty saurians of the highland swamps," he said kindly, "and snared the saber-spined porcupine. But deadlier than these is the treachery of the Earthmen. Yield in this to the wisdom of the elders. The Controller must die."

Gray was jerked to his feet. He found that he could stand, and with the rough help of two of the men, to stumble along. They led him out of the shed into the irregular street, for some distance into the underbrush. Naked Venusian children who tried to follow were driven away, and presently they were alone, Gray and a dozen of the savage looking men, in the primeval thorn forest.

● "This place will serve," Garald decided, stopping at a little clearing. The Venusians stepped away from Gray, and the leader confronted him, heavy mace in hand.

But before the blow was struck Garald happened to glance upward, and what he saw through the interlaced thorns made him throw the shining weapon hastily under a dense bush, where its glitter would not attract the eye of an observer from above. The other Venusians did the same. Two of them seized Gray in their powerful grip, and all stood stock still.

"How many are there?" one of the men asked, standing immovable.

"Five," Garald replied. "Controllers' cars. We may not kill this Earthman now, or we all die. Walk back to the huts, Earthman, your friends have come to save you!"

Back again in the village, hasty preparations were made for the tribe to flee in case the village should be discovered. Under the guidance of a few hunters as a protection against wild beasts, the women and children were sent into the forest on the side opposite the one from which the controllers were expected. With them went the

man who had lost his foot. Although the Venusians were powerful men, they could not hope to fight against the heat rays and paralyzing cones of the Earthmen.

After about an hour the Venusians' worst fears were realized. An outpost came running.

"They have found the wrecked car," he panted. "They are following the trail of Goren's blood, and it is bringing them straight here."

"How many are there?" Garald asked tensely.

"I counted seven."

"Not enough to pursue us in the forest!" Garald remarked with some surprise. "We could kill them with thrown maces, one by one, unless they have one of their big rays, that could burn the whole forest."

From places of concealment they waited, and presently the Earthmen came in sight. As they entered the little ravine Garald directed several of his men to the higher ground on either side, from which they could pelt the invaders with stones. He himself bound and gagged his prisoner, allowing him to sit, perfectly helpless, against a tree.

Now the Controllers stopped for a few words together; then the leader came on alone. He was a short, stocky man, evidently courageous enough, but uneasy. His heat pencil loop was conspicuously empty, as was his cone clip. He held his hand high and bellowed; "Peace!"

Garald let him advance another hundred feet, then stepped out to confront him. The Venusian was also empty-handed, but his mace hung ready from a thong looped over one shoulder.

"I come in peace!" the Earthman declared again. "We seek not to molest you or your people, but to find a fugitive who fled here. Yield him and we retreat."

Garald stared into the hard, ruddy face, with its glinting green eyes, and replied contemptuously, "We hold no prisoner of yours here, and if we did, we would refuse to yield him. As for spies, we deal with them in our own way."

The Earthman suggested shrewdly, "The man we seek is called Gradus Gray, and he wears the uniform of the Controllers. He is a traitor. Should our demand interfere with your own plans, I am empowered to say that Gray's dead body, if recognizable as his, would be equally acceptable to us."

"Do you mean," Garald asked slowly, "that we may kill him, and you will depart in peace with his body?"

"Exactly!" the Earthman declared with a grin.

"Then," Garald declared loudly, "he is our friend after all, and we will fight for him!"

Instantly the Earthman's hand went under his tunic, and brought forth a concealed heat pencil. But he was too slow. There was a puff of smoke and a white, powdery streak appeared suddenly on one of Garald's arms, but in that instant his heavy mace split the Earthman's head, passed down perpendicularly through his neck and body, and the two halves of the body fell away from each other.

Immediately the other Controllers fled to cover behind rocks, and the narrow intense beams from their heat pencils cut through the tops of the thorn trees, showering down, deadly as knives, hundreds of the gleaming, razor-sharp thorns. The Venusians fled to safety. Garald stopped by Gray's side, swiftly cut his bonds, and helped him to his feet.

"I will support you as we run," he promised hurriedly. "We can not fight against their weapons. But we shall help you get to the I. F. P. post. It can be reached in one passage of the sun around the horizon. Habal shall go with you."

The Venusians easily outdistanced the Controllers, who, fearing ambush, progressed slowly and cautiously. By the time they reached the deserted village there was nothing to be seen of their pursuers.

Garald called Habal, gave him his instructions. Habal showed his pleasure by instinctively stroking Gray's back —the Venusian form of salutation.

"Habal is honored to help a friend of Panco's!" the stalwart young semi-savage declared.

Gray's walk had loosened up his muscles, had helped to bring his paralyzed nerves into a more nearly normal condition. Without much difficulty he followed Habal along a practically undiscernible trail. In his hand he carried a light spear, for in his present condition he would not have been able to carry one of the heavy maces.

As the forest closed around them he had a last glimpse of Garald and his men turning to follow their women to thickets so impenetrable that they could not be routed out by an army. Only Garald was looking back, and as Gray turned the Venusian held up one hand in a gesture of friendship and farewell. But Habal was vanishing only a few feet away, and Gray turned quickly to follow him.

They traveled interminably, mostly through jungle, avoiding all clearings in which they might have been discovered from the air. Through the cunning of Habal, they stayed clear of dangerous beasts, and through Habal's knowledge of edible fruits, they slaked their thirst and satisfied their hunger.

Gray was utterly exhausted when Habal threw up his head and sniffed.

"The Endless Sea is near!" he declared.

Even Gray's insensitive nostrils detected the fresh odor of the ocean breeze. A half hour later they crossed a stretch of bare rock, and Habal almost carried the half-fainting Earthman into the sentryhouse outside the high walls of the I. F. P. station.

● For twenty-four hours Haye and Panco were kept in almost total darkness, and they were given neither food nor drink. These physical discomforts were nothing to Haye compared to the mental agony of the realization of what was happening to Virla. Her drawn face was before him constantly.

Once he asked Panco, "Isn't there a chance that some of the other men in the laboratory might give her the treatment?"

"They would not dare," Panco said with deep regret. "In order to guard the secret of our remedy, I always completed the last few stages in its making myself. My friends could learn it, but it would take some weeks of experimentation before they would dare to use it. In the meantime—"

Haye clamped his teeth in order to suppress a groan.

"She's the dearest thing in the world to me," he said after a while, in a quiet tone. "I believe I'd sacrifice the solar system for her!"

Panco, from the darkness of his corner, said nothing.

Neither had suspected that the cell might be equipped with a microphone. But such was the case, and every word that they had uttered since their confinement had been heard by an observer, as well as recorded on a coil.

This was the reason why Gray had not spoken, for he knew of that arrangement. Now Haye's remark was promptly reported to Dills.

Very shortly after that a guard came to the cell and ordered Haye to come out, while Panco was roughly commanded to stay. Haye was conducted to Dills' office. The governor was far more friendly than he had been before. He ordered refreshments brought in, and waited patiently while Haye assuaged his hunger and thirst.

"Sorry we had to be sort of rough, Haye," he said, then, with a winning smile. "Treason sometimes reaches into high places, and your friendship for Panco naturally put you under suspicion."

Haye stared at the governor coldly, and Dills continued, "In our own ranks too. Only today one of our guards—a fellow named Gray, was captured with a group of Venusian revolutionaries in the outlaw belt. What was he doing there? I don't know. Perhaps you noticed him? Did he communicate with Panco? Not impossible, is it? Perhaps Panco tried to give him some message to his revolutionary fellows. Perhaps it was he who transmitted certain orders—but we will come to that in a moment.

"This much is certain: Gray was captured with certain Venusian outlaws, and, of course, was immediately executed. We did not find out what he wanted there—there are so many ramifications, you see."

Dills watched Haye narrowly to see what effect this lie would have on him. He noted the officer's jaw muscles tighten, with satisfaction, and continued: "There is a girl, I believe, whom you brought with you—a girl who means a great deal? Forgive me, my dear fellow, if I bring this up, but—"

Haye forced himself to speak calmly: "What about the girl?"

"I'd rather have you see yourself," Dills evaded. "Will you give me your word that you will not attack me, nor attempt to escape?"

"Not just now."

"The word of an officer and a gentleman is enough. Follow me."

Dills led the way out into the court, where a gyrocar was waiting for them. They climbed in, and an attendant carefully closed the ray-proof *migraine* hood over them. Lightly they drifted up and started their swift progress over the city.

In a few minutes they came in sight of the hospital, and Haye, with hope and dread, looked forward to seeing Virla again. How much worse would she be?

The car came to the ground, settled on its springs. A cordon of Controller guards was thrown around the building, which was set in a beautiful park. These saluted respectfully as Dills climbed out of the car, following Haye.

The officer bounded up the broad, low flight of steps and raced through the wide, cool corridors. A pang of fear shot through him as he came to the well-remembered room. The door was open!

He leaped inside. The heat panels were off, and a common tubelight supplied the only illumination. The bed was disordered, but its occupant was gone.

"Dills! Dills!" Haye shouted down the echoing corridor. "She's gone!"

Dills approached, wagging his head sympathetically.

"I'm sorry my boy. I wanted you to know—to see for yourself. You might not have believed me. Notice there isn't a single member of the staff here. They evacuated, took the girl prisoner. A typical example of Venusian treachery. We discovered that their pretended cure was only a fraud, supported by some scientific traitors on Earth. In order to prevent the evidence from falling in our hands, they took everything—the patients—this young lady. I fear you will never see her again."

He looked up shrewdly under lowered lids, and caught the expression on Haye's face. The officer was coming toward him, and his strong hands were opening and closing unpleasantly. Haye had not believed the story.

With a frightened squawk the governor leaped sideways through an open door and slammed it shut. Immediately Haye felt the pricking sensation that was due to a light application of paralyzing rays. The solid metal door was destroying their effectiveness.

There were no windows in any of these rooms, and Dills was a prisoner. Swiftly Haye formed a plan, perfecting its details as he carried heavy electrical apparatus, and everything else he could find, and piling it up before the door. He would have a few more minutes before the guards would become suspicious. Dills had begun to shout, but his voice was muffled and faint.

Haye regretted that he had not taken Dills' weapons away from him. But he had believed Dills, like himself, weaponless. There was nothing to do but to rely on speed and stealth.

● Haye did not even look at the main entrance, but he stealthily made his way up one of the smaller corridors, hoping to get into the large garden at the rear of the hospital. At an intersection he saw an alert guard, but the man had his back to him, and he managed to slip by.

His way led him down a narrow flight of steps, and he stopped in a little vestibule to look out.

In a moment a guard walked past. The fellow had no weapon in his hands, most obviously not expecting trouble. Haye squeezed himself into the narrow space back of the open door and waited. The next time he noted the slight darkening caused by the passing of the guard he called softly:

"'Troller! Step in for a moment. Merclite!"

There was a pause, the sound of a hesitant step. The guard had entered, peering suspiciously into the comparative darkness of the corridor for the illicit dealer in intoxicating chewing gum. Perhaps he was weak in the face of temptation, or perhaps he was overzealous. At any rate his action cost him a terrific clip on the jaw. Haye let the man lie on the floor, and in a moment had divested him of his uniform and weapons. He dragged his victim further into the building, laying him in a bed in one of the hospital rooms. His own clothes he concealed in another room, for he did not want to leave too clear a trail for the inevitable pursuit.

Arrayed as a Controller, he stepped boldly out into the garden. One or two men saw him, but paid no further attention, and in a few minutes he was in the street and running fast.

He had covered about a half mile when he saw a swarm of gyrocars shoot into the air behind him. They started swiftly circling, and he knew that Dills and the guard had been found.

In ever widening circles the cars pursued their hunt, and Haye knew he must soon be discovered. He increased

his pace, careless of cover, for his objective was only a hundred yards, the tall, circular tower of the Gernser Broadcasting Unit. It towered five hundred feet into the air, the highest building in the city, and at its top was the huge, glittering ball that was the antenna of the newscasting plant. Around the tower itself wound the antenna from which emanated the power wave upon which all aircraft except rocket ships must depend. It was like an enormous brazen serpent.

A gyrocar swooped suddenly. Haye saw it in time to dodge into a food shop. He ran out the back, under a covered alleyway, across a short open space, and was inside the tower.

A magnetic lift was standing open. Haye dashed into it and slammed the control lever over to full speed up. The floors flashed by rapidly, and in a moment the lift stopped of itself. That stop, Haye knew, was the highest in the tower. He leaped out, looked swiftly around. He was in a little anteroom. A metal railing shut off the rest of the room from a desk, behind which, sat a pale Venusian girl, who stared at the visitor with frightened eyes.

Haye had no time for amenities. He jerked out a section of the railing and forced it between the lift grillwork, gouging at the heavily insulated solenoids that wound around the car. He was rewarded by a brilliant flash, and the pilot light went out. For the time, at least, there could be no pursuit.

The girl shrieked, and a door opened. An Earthman, clad in a brilliant orange business robe, exclaimed angrily, "What in Pluto! Stand where you are! I'll have you broke for this!"

Haye whirled, and his heat pencil covered the official. "Come out of there!" he snarled. "You too!" as a couple more of the radio technicians appeared at the door.

They obeyed, swearing vengeance. Haye slammed the door and clicked the electric lock. He was alone with a room full of powerful radio apparatus; apparatus capable of girdling Venus, and a special wavelength that would reach Earth and would be automatically rebroadcast without delay. Complicated as this plant was, the controls were so simple that even a man less expert than Haye could have operated it.

In a moment he had all carrier waves going out. Faintly, through the heavy door, he heard a pounding in the anteroom. They were smashing a way through the stalled lift car, no doubt.

Forgetting everything else, Haye stepped before the microphone and the serried ranks of watchful stereolenses, and told his story. Told of the attempts to wreck the ship; told of the kidnaping of himself and of Panco; told of the disappearance of Virla and the entire hospital staff.

"My friends," he concluded, "the people of Earth and of Venus have been made the victims of a monstrous conspiracy for the benefit of a band of interplanetary financial bandits. They have broken men's lives and women's hearts. They have set races apart and sent them at one anothers' throats.

"I may not live for five minutes longer, so I say now to you people of Venus and of Earth, Governor Dills and his henchmen are traitors, servants of greater traitors. And I appeal to you people of Earth, do not abandon the Liberation; and to you people of Venus, do not think evil of the Earth because of the treachery that has been shown you.

"They have gained the anteroom. The door between us is glowing red. In a moment they will be in here, and I will be dead. My last appeal is to the Interplanetary Flying Police, in Venusian posts, and anywhere in space. Go at once to the Government Group and search the cells beneath the buildings. There you will find Panco, the man who can end the plague. Search well, for there you also will find Virla, the Earth girl, who was abducted by Dills to throw suspicion upon the Venusians. And no one knows what other hapless prisoners—"

● The door glowed white, and was throwing off feathery sparks. Haye busied himself for the next few seconds in assembling odds and ends of metal, which he employed skillfully in a plan to create as much havoc as possible. This done, he opened a number of switches, closed others. In a second a dozen fires sprang up around the room, and roaring arcs threw off acrid smoke. The room was enveloped in a greenish fog, and through this, like a demon, loomed the figure of the officer, still creating further destruction.

The door buckled, crashed open. A dozen menacing figures, about to dash in, recoiled before the inferno that confronted them. The room was all metal and lithocrete. It could not burn, but it seemed death to enter it.

No one saw Haye climbing swiftly up the now dead cable that led to the antenna ball high overhead. There was space enough on all sides for him to get out, and in a few minutes his blackened figure might have been seen, by a very good observer, as he scuttled into one of the openings at the underside of the ball. But no one saw him. The attention of the city was directed toward the south.

From there, like an avenging god, came roaring the thunderbolt of an I. F. P. rocket ship. Not in a generation had one been seen over Gernser. It wheeled, bouncing along, so it seemed, on a steady succession of thunderous blasts. In the same movement its great atmospheric wings unfolded, and the ship's speed slowed down until it was barely maintaining its altitude. It circled the broadcasting tower, and a man walked out to the wing tip, scanning the tower anxiously.

Haye climbed out, pointed toward the Government buildings and made imperative motions.

"Get them first!" he bellowed. "I'm safe enough up here!"

The man on the wing grinned. He lay down, hooked his arms and legs securely in loops provided for that purpose, and in a moment the big ship leaped the comparatively short distance to the sinister group of buildings on a hill.

Gernser seemed swarming with the I. F. P. The natives, shy and fearful at first, had quickly become friendly with these tolerant Earthmen who were so unlike the aloof, suspicious and unjust Controllers they had known so long. From a hundred posts on Venus and elsewhere they had come; from lonely orbital controls, to scotch the greatest interplanetary conspiracy the solar system had ever known.

As Haye, in spruce new uniform, came out of the hospital, Panco at his side, a private on guard there saluted smartly.

"Hope the young lady is better, sir!"

"She's recovering fast, Halsey. Rest and food is all she needs, and regular injections of the anti-toxin."

"Glad to hear that, sir!" declared the man, brightening. "I've got a girl, back there—"

Panco patted Halsey on the back. The Venusian's expressive eyes were large and happy.

"The girl will be all right. Large supplies of the antitoxin are already on the way to Earth. And the formula has been radioed to the scientists on your planet. Within six weeks they will be making their own.

Together they walked through the park that surrounded the hospital. Seeking solitude, they drifted along the winding paths. Presently, in a secluded corner, they saw a man in the spruce uniform of the I. F. P. Haye looked at the man sharply. He knew of no man off duty just then. This one was telling a tall tale of adventure to a group of young and pretty Venusian girls. The fact that he was more than twice their ages did not seem to diminish the enthralling interest of what he said.

The man jumped to his feet and saluted. Haye recognized the man who had handed him the comet button, that day in his cell. Gray also recognizing Haye, grinned happily.

Haye shook Gray's hand cordially.

"I heard the commander of the Cliff post enlisted you. I want to tell you, Gray, that there won't be any difficulty about the service record."

"Thank you sir!" Gray said gratefully.

"I'd like to have you tell me, though," the captain continued, "just what happened."

"Nothing much to it, sir. That day I handed you the button I just got homesick for the Service, I guess. I was sore, a good many years. But after getting a sample of the Controllers, the I. F. P. looked pretty good to me. I thought I saw a good chance to get back in. Had a little trouble, on the way, but finally reached the post. The ship had just started when your broadcast came over. That proved my story, and Lieutenant Nase certainly burned up the ether to get to Gernser. We found everything just about as you said, sir."

"And a good job you did, Gray. And now, getting back to discipline, where's your pass?"

Gray produced it triumphantly, and Haye was about to dismiss him. But Gray had something else on his mind.

"Please, Captain. One thing more?"

"Go ahead."

"Now that Venus is to be an independent planet, are the natives eligible to the I. F. P.?"

"That's my understanding."

"Well, Captain, when the time comes, I'd like to have you recommend a friend of mine, a scalback named Habal, a swell kid!"

THE END

WONDER STORIES NOW 15c

FOR some time we have been considering a reduction in the price of WONDER STORIES from 25c to 15c. We have decided to put the change into effect, beginning with this issue.

We believe the change to the lower price will be welcomed by all of our readers, as the present financial state of the country has made it apparent that magazines of the type of WONDER STORIES should follow the trend of other magazines which also found it necessary to revert to a popular price.

It will be noted in perusing the present issue that in practically all respects you get almost as much for your 15c as you did for 25c heretofore. You will be getting nearly as many stories per month, and you will be getting about the same number of Paul's illustrations as before under the 25c price.

While the number of pages have been reduced, the quality of the stories has not suffered; the stories are merely shorter and more to the point.

A good author can tell you the same story in fifteen pages for which a poor one needs twenty-five. Of course, the loss is his because he does not get paid quite as much as he did before. But in the end, he is just as much benefited as you, the reader, because if the stories are short and to the point, the reader usually will like them better than if they are long drawn out.

Story writing is a science, the same as any other science. If you read the stories which were published even fifty years ago, such as those written by Dickens and other famous authors of the day, you will be amazed at the unwieldly lengths they ran to. If Dickens were living today, he would have to conform to the present and more rapid pace, and cut his stories down to about 25% of what they were then. And, incidentally, the stories would not suffer thereby.

This idea has been uppermost in our mind, that while presenting you with a magazine of reduced cost, we will give you the same value as heretofore. The stories are shortened but not shortened at the cost of quality.

Unless we are all wrong, we sincerely hope and believe that you will like the magazine better now than you did before.

We also have purposely "saddle-stitched" the magazine exactly in the style of well-known magazines such as THE SATURDAY EVENING POST, LITERARY DIGEST, and many others. We were moved to do this because it has been found that in this form the magazine is easier read than with the square back. In the present shape, the magazin opens up flat, and is handier in reading than it was heretofore.

Now let's hear from you readers if you approve of these changes.

HUGO GERNSBACK,
Editor.

(Illustration by Paul)

Forcibly he was taken to the site of his stalagmite. Already a crystal base had been set. The plant-men crowded about

THE LAKE OF LIFE

By ARTHUR G. STANGLAND

● One of the unexplored mysteries of the world is central Australia. From what we know of that vast, baking continent, the forces of evolution have played queer tricks, and have produced veritable monsters of animal life.

We must be prepared then to accept what Mr. Stangland tells us in this story, as a real possibility. That forms of life might develop in that untamed desert, different from anything we know, is a possibility. A controversy has been raging in our columns about life founded about silicon or sulphur instead of carbon. Now we have a new idea, which, however, has some sound scientific backing.

But whether you accept Mr. Stangland's idea or not, you will agree that he has written a corking yarn.

● The blasting rays of the Central Australian sun could not have been more harrowing than the raging thirst that wracked Lyle Laughlin's slender body. In the shade of the autogiro's low, stubby wing he lolled, eyeing his bronzed companion with mounting disfavor.

"What in hell's keeping that black beggar, Webby?" he growled through swollen, chapped lips, fiery-dry from water famine. Sudden terrific anger blazed up in him from nowhere in particular. A hungry man is an angry man, but a thirsty man is an unreasoning primitive.

"Buck up, old fellow!" soothed the other with a thick inflection to his words. He made a pitiful attempt to wet parchment-like lips, and then went on. "Bidgee will be back soon, you know. He's only been gone ten or fifteen minutes at most. It takes time to find those roots and squeeze the water out of them."

Laughlin's anger slowly collapsed, and the veneer of civilization once again sheathed the inner primordial man. His mental processes took up other matters as an escape-avenue from dire necessities.

"Where do you suppose we are?" he asked, shifting restlessly over the ground.

"Blamed if I know, Laughlin," returned the deep-tanned man. "Somewhere northwest of Lake Amadeus. If that damned petrol gauge hadn't been sticking all the time at 'half-empty,' we should have been at the Lake by now for more fuel. What colossal asses we are! Searching for a lost exploring party and now we turn up lost ourselves! Rather a silly proposition, what?"

"Well, Laxton and Davidson have been missing for about a month, Webby. I'm afraid your Government's dream of a big fresh water lake in Central Australia is a chimera. I once heard you yourself tell Professor Albert at Oregon State that all the lakes in Australia are salt."

"So I did, Laughlin. But you're an American and I'm an Aussie. I know these blackmen, and even if their stories are a bit colored by native superstition, still there is a vein of similarity running through all of them. Down at Canberra, Swanson said, before you and I left: 'Listen, Webster, I don't know how much truth there is to these legends of a fresh-water lake, but Laxton and Davidson were sent out by us to find it. They haven't returned yet. It's up to us to find them—don't give up till you do!' So here we are."

At this moment Laughlin sat up in sudden interest. Coming toward them was the aborigine, Murrumbidgee, government black-tracker attached to their searching party. In his hand he carried a small canteen.

"Here's Bidgee!" cried the American excitedly.

Relief showed visibly in both men's faces, as once again the burning desire for water shattered all other thought patterns. Eagerly, they took the canteen from the native, removing the lid. Nearly a quarter of an inch of hot liquid covered the bottom. The merest vestige of civilized courtesy caused Laughlin to refrain from gulping it down then and there. In the American's eyes Webster portioned out damnably few drops on the lid. Only a teaser!

"Wash your mouth out and wet your lips, but don't swallow any of it!" cautioned the Australian, as he gauged the thirst-crazed Laughlin through shrewd blue eyes.

However difficult it was to whet his raging thirst and then reject the bitter liquid, Laughlin harkened to the desert-wise Aussie. He mouthed it around, sluicing it audibly, and enjoying its slobbering, inelegant sound. He watched Webster mimic him. Then regretfully, he spewed it out upon the parched ground that promptly sucked it in without a visible surface trace. Beside him lay Bidgee in the shade, watching both men with soft dark eyes. A pasty tongue came out and ran over cracked lips.

"Bidgee!" barked the Australian suddenly, "haven't you had a drop of this yet?" The can lay empty on the ground.

"Save'em all. Bidgee stronger than white men," returned the aborigine with a friendly, wan smile and flash of white teeth.

Webster sat in speechless awe for a moment. "'Struth! One hundred and twenty in the shade and you never took a drop! You poor damn', faithful devil!"

Laughlin was shocked into horrible, self-accusing reflections as he shamefacedly recalled his thoughtless domineering greed. Civilized! Murrumbidgee by his simple act had more right to the appellation than they Perhaps if he were less of a civilized pig, he might profit by trying to emulate the aborigine!

"See'em plane wreck, north," announced Bidgee, pointing with a supple well-molded arm that dripped oozing sweat.

"You saw what?" cried both white men in unison.

"See'em yellow plane—mebbe half mile."

"That's the ship!" exclaimed Webster, rising hastily and putting on his cork sun-helmet. He reached into a cockpit and drew out several automatics, handing one to Laughlin. "Here, we may need them for snakes."

● Immediately they started for a line of white-boled gum trees, more like bare poles than the living, bark-shedding trees they had been years before. The devastating drought of many seasons standing had left the lone patches of eucalyptus trees like bone-whitened graveyards dotting the vast inland deserts. Laughlin took one backward glance as they moved through the blinding radiance of the torrid day. Helplessly, the big red autogiro moped in the little valley, her great 500 horsepower motor useless without fuel.

Forlornly, the four big rotors overhead drooped like the petals of a thirsty flower. At that, they could have done worse when the motor died and they had descended here. With panting breaths they picked their way, following the lead of Murrumbidgee. Even dressed as he was in thin shirt, light shorts and strong leather boots, the American suffered extremely from the terrific heat that boiled every bit of moisture out of his body.

How anything could exist in such a hell was a wondrous mystery to him, yet here and there they passed a curra-jong shrub-tree tenaciously clinging to life, arid as it might be. Suddenly up ahead, Bidgee leaped into the air with a startled shout; at the same time Webster backed up on to Laughlin's toes quite harshly. Quickly, the Australian was reaching for his automatic. Peering around his friend's stalwart form, Laughlin stared down at the terrible beauty of a coiled tiger-snake, disturbed from a peaceful siesta. Just as it started to dart from the mass of its coils, the roar of Webster's gun broke the hypnotic silence and the serpent jerked backward.

"My word, a nasty escape!" exclaimed the Australian coolly, replacing his automatic.

Murrumbidgee came back grinning. "Make'em jump quick!" he laughed, regarding the gorgeous colored snake respectfully.

Beyond the patch of dead gums, the trio came out on a small elevation above the surrounding desert. In answer to Webster's immediate question, Murrumbidgee pointed to the north. For an instant the white man gazed steadily; then he drew out his field glasses. He turned to Laughlin with an exclamation.

"By Jove, it is Laxton's and Davidson's plane!" He removed his helmet to wipe his dripping brow, while Laughlin inspected the scene through the binoculars.

What the latter saw through shimmering heat waves on the desert was a mass of yellow wreckage—wings, fuselage and radial engine. Yet not a sign of life did he see.

As they shoved on mercilessly through the insufferable day, disregarding the miserably uncomfortable feeling of wet clothes clinging skin-tight, and chafing burned thighs, Laughlin suppressed a desire to complain of a raw throat. He knew without them saying so, that the others also were breathing fire-heated air down into their aching lungs. Instead, he kept a discreet silence and marched on through the broiling atmosphere.

Approaching the ship, the American, for all his fatigue, gave a low whistle. "Say, this ship didn't crack-up—look at it!"

The Australian glanced up sharply at his companion and then back at the ship. "Oh, come now, Laughlin, it is quite possible that it was wrecked in a 'willy-willy.' You know how those wind storms play the very devil with things."

"Well, I'm telling you, Webby, I've seen some funny accidents, but this certainly takes the cake. Why wasn't the engine broken loose if she fell?" Laughlin was climbing over the plane. Suddenly he straightened up. "And say—what happened to their reserve gasoline tanks! They're gone!"

This made more of an impression on the Australian who immediately sprang up alongside Laughlin. One look confirmed that strange report. Murrumbidgee came back toward the plane from a minute inspection of the surrounding ground.

"Davidson 'n' Laxton—they go north yet," reported the aboriginal with serious mien, "plentee bad. Strange tracks come along there." And he flung out an arm to the north where both men could see a range of low hills, covered with brown, dead scrub.

"Bonza fellow, Bidgee!" cried Webster, leaping to the ground with a heavy thump. "Come on, Laughlin, we're on the trail at last!" And the big brown-skinned Australian, despite the terrific mid-day heat, started off for the rolling hills.

It was not a very great distance to their objective, but then, distance is not always counted in linear units. The grim determination to endure sweating heat and agonizing thirst ofttimes becomes the unit of measure. Laughlin trudged along grimly. He had accepted the Australian Government's commission to search for the lost exploring party along with his old classmate, and damned if he would back down now!

Yet, queer things went through his mind for a practical engineer. He never stopped to muse that the thought-stimuli might have originated in his ganglion centers; still, strangely apart from the dust in his nostrils and the white glare in his eyes from the alkaline desert, there ran a peculiar analogy between his rag-limp sensations and the helpless wriggling of a worm in the hot sun, moist-fresh from dank earth. Hardly more than fifteen hours without water, he ambled ever onward after his friend, vaguely wondering if sponges freshly torn from the sea-bottom felt any sensations drying stiff under a tropical sun.

"Wonder what the devil made them head this way?" mused Webster, swinging along less smartly and lagging behind his initial eagerness. "Of course, Bidgee uncovered strange foot prints, another angle to consider, yet a paradoxical one, because there are no known tribe of blackmen around here."

● Lyle was about to reply when Murrumbidgee up ahead, jerked around with a startled exclamation. "Smell

'em *water!*"

Powerful drugs could not have enlivened their flagging spirits more. Laughlin was all for sprinting the remainder of the way to the top of the hill but for Webster's sharp admonition.

"Great days! Water at last!" croaked Laughlin joyfully. With difficulty he held back his suddenly lightened feet.

The Garden of Eden could not have been more enthralling as they took the top of the hill. Like an orchid in the sterile Sahara it bloomed below them, starting at their feet in dry tough grass and quickly thickening to a dense luxuriant bush of fragrant gums and kauri pine and tangled sub-tropical undergrowth, stopping only at the edge of a sapphire lake. None of the three halted in a rhapsodical trance to liken it to a bit of transplanted sky in an emerald setting. For them, the most its beauty could offer was the cooling freshness of sweet water. And by all the saving graces of past hardships endured, they would have their bellies full!

Webster did not warn against undue exertion and haste this time. In fact, he was first down the slope. "What-o! Salt water never looked that fresh!"

As they entered the bush, Laughlin found breath to exclaim:

"If only we had been hovering a bit higher yesterday, we might have seen this valley, but we were too low."

"That's why Davidson and Laxton headed this way," answered Webster in a panting breath. "Must have been flying high enough to see it. Anyway, Laughlin, the 'dream' has apparently come true!"

Interlacing vines and rambling bushes impeded their progress enough to raise their thirsts to a slavering paste, and at times the sharp whip of recalcitrant twigs on hot cheeks brought forth startling original jets of profanity in three jargons. At last they plunged out upon the short stretch of sand beach. Tentatively, yet fearfully, they scooped up a cupped-handful of the water.

"It *is* sweet!" shouted Webster. And then he laid himself flat at the water's edge, sucking it up with the efficiency of an elephant's proboscis. He bathed his face and neck.

Though last to start drinking, Murrumbidgee was first up, obeying Nature's prompting to temperance after great thirst. Observant as a stalking leopard, he was examining the beach and the edge of the bush when both white men got up.

"Trail along beach here," he reported to them, "mebbe go 'long by big cave up there." And he pointed up the beach to a huge black opening into which the lake disappeared.

"My word, Laughlin," exclaimed Webster, "perhaps Davidson and Laxton have discovered a tribe here in the valley! Let's see where this trail goes. Go on, Bidgee!"

Eyes and ears grown large, the little party headed for the cave, proceeding with the discreet awe of ones exploring a lost world. Deep in the bush fluttered an occasional splash of blood-red and brilliant green, as rosella parrots and parakeets hopped from branch to branch, feasting on succulent eucalytus tips and accompanying the feast with the quaintly audible tittle-tattle of idling busy-bodies.

Once a big kookaburra dove at the ground and then clumsily made away again to the far height of a giant gum with a deadly, squirming black-snake impaled in his strong beak. From the end of a branch he dropped the serpent, watching its writhing gyrations down through space with an impersonal cocked eye. Then he rolled forth a long, loud strident laugh that set up echoes far in the bush, an eerie string of mirthless humor as of a dozen of his kind in unison.

"I hate that confounded laughing-jack!" muttered Laughlin in apprehensive tones. "Sounds like the bush itself laughing at us!"

"Rather!" agreed the Australian. "I don't like this either, Laughlin. I feel as though something horrid is leering at us."

By now they had come upon a sandy flat space near the cave opening. Dense growth crowded right up to it. Standing at the water's edge, Laughlin looked long at the velvet depths entering the cave.

"Webby! This is the outlet of the lake—of course, it had to have one to keep fresh. It must disappear into subterranean strata!"

"Suppose we go inside and look around?" suggested the Australian, starting for the mouth of the natural tunnel.

But he got no farther than ten feet inside the entrance on a rock ledge where he was in the act of stepping higher.

"God!"

The ghastly quiver in the man's voice, dangerously near to a horrible, gurgling sob, precipitated a host of dormant, hair-raising thrills echoing up and down Laughlin's spine. And when Webster's head revolved stiffly, owl-like, the blood-dry skin of his now leathery looking face sent a clammy shudder through the American engineer.

"Look at that!"

Dumbly, Laughlin stepped up beside the other and followed his pointing finger. The ghastly sight quickly plunged him in a sickening nausea. For human eyes are not wont to gaze on their kind sheathed in crystal-clear stalagmites, crinkly parchment-skin stretched drum-tight over skulls with here and there indentations for mouth and ears, skulls on top of atrophied bodies that once had pulsated in blood-warm passion. It left both men badly shaken. Murrumbidgee gaped in awe behind them.

"Poor Laxton!" murmured Webster at last, rousing up courage finally to cast a second glance at the unclosed eyes staring sightlessly out of the cave. "And Davidson, too! What an end!"

CHAPTER II

The Portals of the Unknown

● Other victims of other times and vogue gazed out upon them with deadened senses from the midst of their crystal shrouds. Vikings there were, with ungainly lumps on bony arms that once had been powerful knotted muscles. Proud Genoese merchantmen in doublet and hose, plucked from their East Indian ships. Seventeenth century English explorers shorn of the glamor and romanticism that once was theirs, and now only prevented from absolute dissolution by a sheathing of thick-walled stalagmite.

"Lord, what a gruesome 'Hall of Time'!" uttered the Australian with an involuntary shudder. "What hellish type of people have done this?"

Overcoming his first disgust, Laughlin went among the grisly columns, examined them at close range.

"Strange!" he muttered to himself. Then he turned to the Australian. "Webby, whoever these hell's angels are, they must use a rapidly solidifying solution. There are

no stalactites overhead, so they must drip this stuff over their victim's body!"

"My word—imagine!" exclaimed Webster in horror. He gave one last wild look around. "'Struth, let's get out of here." And he made way for the ledge.

Yet, they were not to walk out of that cave. In a swirling, thumping confusion of great grey shapes leaping at them suddenly from everywhere in general, Webster and Laughlin found themselves confronting five huge man-killing kangaroos. In that blurred instant it would have been super-human to whip out sputtering automatics. In an instant it was over, and both men were hugged tight to the big marsupials in their atrophied fore-feet, expecting in an agony of cold sweat to feel the ripping swipe of hind feet disemboweling them then and there.

But it was not to be, for the towering monsters promptly started off up the beach by clipping off a neat twenty feet at each leap. Murrumbidgee's curiosity alone saved him from capture, for he had loitered behind near the columns of stalagmites, so that the big man-killers had missed him.

Where they were being taken the captives had no visual idea, for their heads were immovably clamped to the furry breasts of the beasts. It was a terrifying, breathless experience that ended only when the men began to fear for their much jolted viscera. Log-like they were suddenly abandoned by their captors, and clumped back-down in the sand quite unceremoniously.

For a moment Laughlin lay there breathless, thinking in a furious silence. Damnation, what an experience! Guess they should feel lucky not being halved and quartered by those razor hoofs.

And then he saw it—a mere blob of a head. But from his graceless stance it was upside-down. He turned over and sat up, leaning on his hands. For an instant the tableau adhered, Laughlin staring up at the strange men and they staring back at him. Laughlin's mental processes speeded up in a flurry of excitement, as new impressions, mostly visual, along with certain emotional reflexes were rendered away in memory grooves.

Over optical nerves like a telephoto was carried the picture of a slight, dark creature with a round, perfectly bald head. Small eyes stared out from a browless face. Instead of gleaming sweat-covered skin, Laughlin was astounded to notice a peculiar cortex covering, not unlike gum bark smoothed down with the nap left. Certainly he had never seen a stranger looking aborigine, nor had Webster for that matter, for the latter also was staring in stupefaction. And then the spell was suddenly shattered as the odd-looking natives leaped upon them, disarming them adroitly and driving them to their feet.

"Bli'me, what rare people!" ejaculated the Australian, getting hastily to his feet rather than tempt a second forthright prod in the nether premises.

"Talk to 'em, Webby, talk to 'em—see what you can find out!"

Thereupon, the Australian tried out upon them in voluble quantity all the aboriginal jargons he could command, only to have them stare in toothless awe at the amazing sounds tumbling from the white man's lips. And then, one of them directed a stream of queer, high-pitched noises at him in return. At which the white men also stared in nettled perplexity.

"Heh, this is getting nowhere in a great hurry!" blurted the disgusted Laughlin, looking away to gaze up at the blue sky and the bush about, as if rambling for an inspiration.

Suddenly, Webster tapped himself, saying quite distinctly several times:

"Webster! Webster!"

Taking the cue, Laughlin did the same for himself.

Apparently their intelligence grasped the idea, for one of the men thumped his chest with what would have been called "thick conceit" in any language, saying in a squeaky voice: "Hafa!"

But the conversation got no further. It died there in a barren silence.

"Well, Webby, apparently, we're prisoners here," declared Laughlin at last. "And much as I hate to mention it, I think there's a connection between them and those stalagmites. Bidgee was one lucky blackbird, those trained kangaroos never got him!"

"Let's find out!" cried Webby with a horrible fascination to know the worst.

● He stooped in the sand and fashioned a relief map of the whole valley, not omitting the cave of stalgamites. Pointing at the tiny replicas of artificial stalgamites he put up two fingers and then grimacing, shook his fist threateningly.

But the strange man, Hafa, understood only too well, as the white men realized with a sudden shock, for he held up four fingers, pointing at them, and built *two* more stalagmites at the miniature cave. They were destined for the cave, too!

Instead of going berserk or anything of the sort, both men stood calmly silent. And anyway, there were too many opposing them, with the subsequent arrival of others. This was something to be handled with *finesse* in spite of the panicky horror and revulsion that gripped them for the moment.

And then they discovered something else. Laughlin decided a cool drink in the lake would do much to quiet his whirling brain. But Hafa decided differently, implying that he was going to do the thinking for him henceforth—even though he couldn't understand him! Pressed for explanation, Hafa with the help of others around him and the relief map, launched forth to explain with much eloquent pantomime that the lake was sacred, that it was their religion or philosophy representing life as they experienced it.

The water gushed up here from a dark hole just as they themselves came into life from the mysterious Unknown. And then the lake broadened out like their lives expanding to the full. Yet, here at the Cave of Stalagmites it disappeared back again to the still mysterious Unknown just as they in life. And they, white men from Outside, invading their land from time to time, were placed at the Portals to the Unknown as guards where Hafa's tribe threw themselves into the swift, deep current of the outlet when they felt their time come.

"Blast me!" exploded the Australian, "fine cobbers we're run into. A whole lake of water and we've got to stand by thirsting because the blooming thing's sacred!"

By this time the sun was heading fast for the horizon. Laughlin had noted a group of mia-mias or huts, more for sleeping quarters than protection from the weather, near the fringe of the bush. Considerable activity flowed

in and about them, and occasionally there came from the north-west, groups of the natives carrying baskets of currajong matting filled with a white substance which they transferred to others who headed on down the beach toward the outlet of the lake.

"Webby!" Laughlin burst out of a sudden, "that's the dehydrated salts from the deserts they must be using to mix with something—the chemical they make those stalagmites with."

"Just fancy!" But the Australian was not fully concerned with such tremendously important details, for he was staring at the dark natives encircling them.

There was a movement in the crowd, and several of the creatures came forward to lead the white men toward the mia-mias. They could have gone their way raising no little trouble, but Webster and Laughlin decided to be peaceful, using their eyes and ears—and their heads. Yet, doubtfully, they looked at one another when they confronted the strong ironwood staves of a retaining pen or open air cell. It was a circular affair of perhaps ten feet diameter with the walls a good twelve to fifteen feet high. There was no door and they had to mount a rickety platform to climb over the wall and drop down. At the last moment when they would have faltered, swaying between making a break for it and fighting it out barehanded, they were persuaded into the primitive prison by the deft use of discomfiting hand-pikes. Laughlin leaped first. Webster landed noisily behind him.

"Cripes, what rough-shod methods they use!" spluttered the Aussie, dusting his hands, as he rose, and then massaging a keen jab in his hind quarters.

In spite of the prospects of incarceration in a "glass house" Laughlin was hungry, and he made known his state by very clumsy gestures to Hafa. Water from the sacred "Lake of Life"—no! Food—that was different.

"Smart devils—these natives," remarked the American, as Hafa hurried off among the mia-mias.

"They'd have to be, to be able to mix a solidifying solution that was crystal clear!"

"But what type are they, Webby?" queried Laughlin in puzzlement. "They don't speak like any you've ever heard. And what squeaky, high-pitched voices they have—almost inhuman!"

"Strike me pink, if I know. As a government commissioner, pater has traveled among them all, taking me with him when I was younger. But we never found any like these before. If you look at them a bit closely, they hardly seem flesh and blood at all!"

Toward the pen came Hafa carrying a rude wooden dish. He mounted the platform and reached over, handing it down to the men inside. Wonderingly, they received it. Standing there with it in their hands, they took one look, and then stared up again at their captor, as if peering for signs of insanity.

"Eucalyptus sap!" exclaimed Laughlin aloud slowly. Then he gaped down at the gummy substance again, hardly believing his eyes. Hafa stood aghast, as if they had insolently stood there and openly accused him of having a club-footed kangaroo for a father and a duck-billed platypus for a mother.

"The bloomin' idiot has a rotten sense of humor, I say!"

● That crystallized the American's smouldering suspicions. He aimed swiftly and threw lustily. The dish flew straight, but the dark man wasn't there. He dropped lightly to the ground, gazing in astonishment at his strange prisoners between the stakes. Bitterly regretting the native could not understand his choice vocabulary, the American took up a stand on the other side and abused him whole-heartedly, if not artistically.

In open awe Hafa stuck his ground, wondering what esoteric sense the white man conveyed by pantomime, for didn't he surely lengthen his nose by two wriggling hands several times? Some more of his kind stopped by, gazing wide-eyed at the gesticulating man inside. Then they all went off, conversing animatedly among themselves as if arguing over what the white man meant.

Laughlin and Webster squatted on the ground in high disgust. To hell with food then! Time they were laying plans for escape anyhow.

"Wonder what they intend to do tonight?" pondered the Australian. "If they think we're going to cooperate anymore in their fiendish scheme to house us permanently tomorrow in that cave, they have two big surprises ready to go off in their midst—and we're both of them! I jolly well have no desire to stand guard at the Portals of the Unknown. Bli'me, we could dig up one of these posts, if they don't leave a guard for the night."

"Quite likely they will leave a guard—I'd lose my respect for Hafa, if he didn't," answered Laughlin. "But I wonder what has become of Bidgee? If he's still in the bush, one of those damned trained kangaroos might come hopping into camp with him yet. That's how we got caught, I think."

"By Jove—good old Bidgee!" exclaimed the Australian. "I'd almost forgotten him for the moment. Yet, I'm afraid he'd be foolish to come snooping around here."

About this time it was fast approaching sunset. Some distance from their prison stockade the natives began to congregate, and before he was aware of it, Laughlin found his eyes fastened unflinchingly on one of them carrying a five gallon gasoline can. What in the world could he be carrying in that! And then, before he could whirl to attract Webster's attention, the Australian grabbed his arm.

"Strike me pink, Laughlin, look at the bloke *eating* gum sap!" And he pointed at one of them near the bole of a blue-gum tree, picking off globules of sap that had run down and gathered in viscous pellets.

Things were happening pretty fast around them now, but yet the American stared, his generous wide mouth half open in a mute exclamation. Furthermore, the native seemed to be enjoying it immensely. But he tarried shortly, hurrying after the rest of them gathering around the tin can placed on the ground some little distance away.

Then out of a restless surging among the crowd there grew a corroboree, but startlingly unlike the ordinary blackmen's native dance—more weird, unearthly, bizarre. Not of the human passion-provoking dance did it partake, but something queerly and terribly different from the hilarious stamp of bare feet and rhythm of bended body. Uncanny thrills of vague fright flurried up and down the white men's fleshy bodies, as if the very racial instincts of a thousand generations slumbering in their plasma of blood and nerve cells revolted in bristling horror.

Strangely quickened, Laughlin could liken them to nothing but a great circle of *plants* or *trees* in the awful

unmoving way they stood, as if slowly taking root before his eyes—unmoving trunks with fantastically trembling limbs, quivering with the semblance of leaves in a stirring breeze.

No sound was made, no foot was moved. The silent gums about the clearing seemed suddenly hushed, *listening*, as if attuned to the circle in racial sympathy. The bush itself loomed newer and yet older at the passing of day, as if awake, wavering, vibrating with terrible, loving personality throbbing softly with the ebb and flow of unfleshly life. And in the very ether about them both men sensed in subconscious depths the inimical alignment against them of plants and trees—of their cytoplasmic consciousness radiating an alien enmity for all things flesh and blood.

Laughlin twitched, snapping the spell. "Smell that, Webby?" he blurted swiftly, sniffing. "Gasoline fumes!"

The Australian stirred, taking tentative whiffs himself. "Fair dinkum, it is!" he returned. "They must have those reservoirs of petrol from Davidson's and Laxton's plane!"

Now the circle of natives began swaying drunkenly out of their grouping, lurching about in maudlin disorder. For some time the two men watched them through the vertical bars of ironwood. In Laughlin an amazing idea cut loose, rambling about in his brain. He looked to his companion with an odd flickering light in his frank blue eyes.

"Webby, I'm not insane—understand me," he began quietly, "But those are not aborigines; they are not anything like them. In fact, they are not flesh and blood humans!"

"What the bloomin' blazes—!" spluttered the Australian instantly.

"I'm going to prove to you that they are *rootless, moving plant organisms!*"

CHAPTER III

Pursuit!

● Webster drew a quick breath . . and then had the fine grace of his people to shut up and listen in bursting silence for a few moments while Laughlin explained things.

"The singular thing I first noticed about them—these plant-men—was their almost browless heads and the fact that they don't inhale with a swelling of the chest. These things didn't impress me until various other singularities obtruded themselves into the picture.

"That flat looking protuberance above the mouth is not a nostril, because it does not have passages if you'll look close. Apparently, it is only a cantilever structure for suspending the face in place. Instead, these strange monstrosities of Nature breathe through that awful bark-like cortex they would call 'skin'! Did you make note of the odd, ribbed veinings near the surface of it? It must be their circulation system—and, Webby what circulates in them for blood I have no stomach to dwell upon. Think of it!"

"I'm half inclined to believe you," assented Webster to the seemingly sane logic. "But how did all this strike you of a sudden?"

"The drunken way they staggered around just now," answered Laughlin. He looked out in the dusk. "They're 'sobering up' now, and going to their huts for the night like all harmless good-natured sots. I read an account at home one time, about a Hindu scientist named Vose who proved by electrical means that plants react exactly like human beings to nerve stimuli. And he showed that they got 'drunk' too, from ether fumes. That particular memory pattern clicked into place when I saw them stagger, and it set off the whole idea I've told you of."

"Laughlin, I'm jolly well beginning to believe in you," began the Aussie, "yet, why has Nature developed a plant organism in our image—and why here of all places in the world?"

"You're getting into deep stuff now, Webby," admonished the American shaking his rather large head. "May as well ask why did Nature evolve Man? Why didn't she stop lower in the chain with—say, a chimpansee? There should be no objection really, if Nature wants to take a 'flyer' at developing a highly organized and intelligent plant organism. All existence is a maddening riddle anyway.

"Perhaps the organism had of necessity to pass through our form pattern on the way to a higher evolution. It's all conjecture. But your second question can be answered more logically. You know yourself that the Australian continent has been cut off from the rest of the great land masses for millions of years. That's why we don't find kangaroos or the platypus anywhere else. It's only too patent that these plant-men emerged from the bottom of Australia's vast dried up inland seas where rare powerful chemicals of life were brought together on drying moist sea beds and incubated by a torrid sun. It's taken millions of years but there they are!"

"Aye, so," agreed Webster, with darkening face, "but the bloody blighters are still intending to do for us," he spat out. For wonderful as were the intricacies of evolution, still another great law unfailingly bade the products of its magnificence to battle for existence.

And both men looked out upon the little village. Few were loitering about in the deepening twilight and they were lagging only in preparation against retiring for the night. Closer to home—if it could be called that—they saw a dark form standing immobile in the vague, colorless dusk, regarding the stockade. But a rising full moon was beginning to sheet the landscape in a ghostly phosphorescent flame, and they could see that he was well alert to things about him.

At the bottom of the stockade wall a whispered consultation came from the shadow of ironwood staves. An hour or so went by in deadened silence. The moon sailed higher, shining more directly into the pen. Still the plant-man stood his post like a growing gum tree. Then, suddenly he moved, and only then would one know he lived. He sat down and fell to regarding the silver pathway the moon shed upon the lake—at least the American and Australian thought so, until a few seconds later, when they had reached the top of the retaining wall and Webster was a-straddle, groping downward for Laughlin's hand to yank him up. The guard came on the run, clucking to the gorgeous night like a scolding cockatoo.

"Thunder and blazes! He's got our guns—and can use them too!"

There was much flourishing of the weapons, accompanied by a veritable cascade of back-talk gushing from the man on the ground outside. Webby took his word for it. From the very first he didn't doubt the sincerity of that vegetable brain behind ominous gun muzzles. He dropped heavily to the ground—inside. The two of them

endured the tirade that spat at them between the spaces of the staves. Then, the plant-man went off mumbling to himself, apparently satisfied with the impression he'd set out to convey.

"In other words," began Laughlin sardonically, "you mean the first chance you get you're going to drill us with those new playthings you and your crew were thoughtful enough to relieve us of!"

"Come, Laughlin, we'll try something else." And the two of them sat down in the middle of their pen. Their fertile brains raced over several courses of pursuit, but abandoned them as being too impractical.

For an hour or so they had lain still, stretched out upon the cool ground hardly more than whispering. Then, stealthily they saw their guard slinking up toward the pen.

"Pretend you're asleep," muttered Webster without moving, "he's coming again!"

● Like the noiseless stealth of a 'possum passing through the bush as a grey shadow, the plant-man crept up on them, peering between the narrow spaces of the bars. No more innocent and harmless looking than babes in the woods, the two men lay breathing regularly, playing 'possum with the 'possum, and making an excellent rendition of it. Long he stood there watching their closed eyelids in the white moonlight. They, apparently reassured on that score, he hastened to one of the mia-mias, disappearing hurriedly into its gloomy maw.

"What's the bloomin' blighter up to now?" But before the Australian had time to raise his head and report to his companion, the plant-man had come out again carrying a weighty object.

Out of one eye Webster strained to see in the uncertainty of the luminous night. There was a flash of moon beams on white polished metal. An electrical thrill tingled to the ends of the Australian's fingers.

"He's got the can of petrol!" he mumbled softly, like a muttering sleeper, taking care not to make a move lest the buzzard eye of their guard catch it.

"Guess he wants to imbibe a bit more," returned Laughlin in a whisper.

Tensely, the two men watched from their difficult position while the plant-man set the five gallon can on the ground and carefully removed the stopper in one corner of the top. Like a young quavering wattle tree he stood before it, while the gasoline fumes billowed out and around him, bathing his whole being in the intoxicating incense. He threw out his arms, supple limbs that they seemed, and thrust his head back, literally drinking it all in with his whole body. Grimly, the two men in the pen watched, daring to raise their heads the better to see. And when the plant-man reeled slightly the first time, they rose from the ground with a fierce, hard intentness in their creamy white faces.

Yet other eyes watched the wavering guard, too—watched from the vantage of dense bush shadows beyond the pale of mia-mias, a shadow merged with those in which it moved—stealthily, deliberately, murderously. Like a thing of the wild and just as dark as night, it slunk out into the dull light of the moon with rapt attention for the thoughtless plant-man in the open, yet heedful of the surrounding huts. The men in the stockade did not see this newest shadow detach itself from the bush, until it went slithering by them ten feet away.

Webster gripped his friend's arm. "Bidgee!" he barely breathed.

Intently the two men stared through the chinks of the pen with lulled breath, as the aborigine skulked forward in the gloom, coming up behind the plant-man. Suddenly, the attacker leapt through the primeval night like a terrible man-killing kangaroo and no less deadly, for the white men saw him wrap an arm around the victim's face and clap a hand over his mouth, brandishing a long flashing knife in the other. The ugly weapon plunged downward, finding its mark in exposed neck with a sickening blunt sound of steel slitting muffled parchment, and ripping through ungodly counterfeits for muscle and bone. One lone stifled gurgle murmured on the night air and the silence of the bush was disturbed no more.

This time no one halted them as they bailed out of the pen and dropped lightly to the ground. Bidgee's jaw was dropped and his eyes were bulging when the two men reached his side where he stood over the dead guard. And well he might stare in awe, for in the feeble rays of the moon now receding from the zenith, there was revealed to human eyes a disgusting grisly sight of severed fibers and tendrils, intermingled with a matrix of mushy tissue over and through which oozed a chlorophyllaceous liquid. The aborigine was positively struck dumb, insensitive even to the lesser exquisite thrill of little sparkling green drops falling from the end of his poised blade.

After his first wave of revulsion, Laughlin whispered: "Plant-man!"

"Ugh! Blazes, let's get out of here!" expostulated the Australian in a hoarse whisper, turning away quickly to look over the ground. "Where're the guns?"

"No red blood, huh?" blurted Murrumbidgee, at last coming aware of his tongue.

But the others were too busy to explain matters. They were deciding to investigate the hut the guard had entered. Deadly steel in their hands sent little thrills of new power quivering through them. Very quietly they approached the entrance way, weaving about to get several views of the interior, but it was too dark to see. Then they boldly sneaked in, intending to throttle any and every voice that might be raised.

The possibility that there was sufficient gasoline to power their autogiro had to be investigated at all costs. In the darkness they butted into several big metal containers on the floor. Silence ensued. A swift, groping examination showed the mia-mia was empty of sleeping plant-men. Then they gently rocked the reservoirs, encountering a ponderous resistance, accompanied by a muffled gurgling. Opening the stop-cocks, the men dashed their hands through the streams and then sniffed the fumes.

"These are the drums all right, Webby, and they're almost full!"

"But how are we going to transport the bloomin' things out of here?"

● There was a pensive silence. Then—

"Webby, I've got an idea that we could scare the living daylights out of these plant-men, if we brought the ship over here, and got the rest of their 'hooch.' You see, we can take that five gallon tank first—easy to cart over to the ship. And if the noise of the engine and the revolving 'windmill' don't scare them away into the bush, that little sub-machine gun we brought along in the ship

for emergency, will do the trick. Only, we've got to hustle and get a head start, because when they find that butchered countryman of theirs out there and us flown the coop, they'll certainly take to the warpath. What do you say?"

"Right-o!" agreed the Australian immediately.

Taking the gasoline can, they started off up the beach at a stiff gait, changing off occasionally with the precious burden. Rather would they have traveled through the bush, cutting directly to the hills, but it was too thick and the slopes too steep so that they made better time in the clear. Apparently, they had accidentally entered the watered paradise by the only decent way.

The first suggestion of false dawn was tinging the east and reflecting the faint blush of sky in the mirrored surface of the lake. A breathless quiet had settled over the bush and all things of Nature, so that the fleeing trio seemed to be slipping through a beneficent fairy-land. But not for long.

Something had gone wrong back at the uncanny village of plant-men. The slain guard was discovered all too early by someone, and before long the hue and cry of vengeful pursuit was sounding at their backs. It was too dark to see them in the distance yet, and even so they had wound around several jutting land spits. Nevertheless, they were leaving a tell-tale assortment of trails in the sand beach. As soon as Bidgee's sharp ears had caught the fatal sounds, they all speeded up to a jogging trot. But even the aborigine's wiry muscles could not ease the strain of the gasoline tank and still keep up with the others. He began to lag painfully.

"Here, give it to me!" commanded Laughlin, and he took the precious load.

They splashed on through the soft sand, beginning to gasp for wind. Yet, hurry as they might and knowing full well it was a race with death, they could not gain any headway. The angry shrill cries of hot pursuit continued to grow closer. At last Laughlin stopped in the midst of flight, setting the can down.

"Listen, Webby, the three of us can't make it together. It's too slow going with this heavy can," wheezed the American, heaving with each breath. "Now, you take this gasoline and get to the 'giro as fast as you can. Bidgee and I'll stay here at this bottle tree to hold 'em off till you fly back!"

"Let me stay instead!" the Australian pleaded.

"Go ahead—don't waste time!" cried Laughlin fiercely, "you're stronger than I am, and can stand the gaff. It's our only chance!"

For a second the Australian looked at Laughlin with almost a softness in his blue eyes. "Fair dinkum, Yank, you're a great bloke," he spoke quickly. "I'll fly back for you both like an avenging bat out of——." Laughlin lost his last words as he sprang away.

In a few minutes the men heard an ominous thumping coming up the beach along with the shouts and cries of the tribe drawing closer. Webster by now had safely penetrated the bush.

Murrumbidgee looked at Laughlin gravely, handling the automatic that the Australian had given him.

"Plentee bad—killer-kangaroos!"

Laughlin had realized it before the aborigine mentioned it. One does not quickly forget the pounding slap of a kangaroo's thick tail, as he leaps over the ground. The two of them, white man and black, fighting side by side for their lives, gazed into each other's eyes momentarily in blood kindship. The supreme moment had come. They moved over to the base of the huge bottle tree, a biological phenomenon that Laughlin had once likened to a gum tree suffering from elephantiasis. Here they took their stand, but not before they made sure the vanguard of the tribe had seen them as they came around the curve of beach some little distance away.

Great, giant forms leaped along among them, proceeding easily even though the plant-men were running swiftly. As soon as they caught sight of their two former prisoners, the pursuers let out a shrill whoop. Immediately the tall grey monsters stepped out and lunged madly through the air ahead of their masters like suddenly unleashed bloodhounds in sight of their quarry.

Laughlin quelled a shudder of fright, as he conjured up a mental picture of a mangled body held in the grip of a kangaroo with bloody hoof. No quarter would be given this time, he felt. It would be a battle to the death with lusting revenge on the enemy's part. The two defenders got behind the tree.

"Don't shoot until you're absolutely sure of hitting, Bidgee," warned Laughlin. "Every shell has to mean a death!"

"Bidgee make'em plentee hot along green-blood men!" returned the blackman, grimly peering around his side of the swollen tree trunk.

CHAPTER IV

The Death of Bidgee

In tense silence they waited the arrival of the canny marsupials, bobbing up and down toward them in long sailing strides. Suddenly, a single, flashing roar from Laughlin's powerful automatic blasted the peaceful dawning, echoing over the still lake with tremendous hollow clap. One of the on-coming kangaroos descending from the peak of a long hop, jerked in mid-air; when he contacted ground, he revolved over end for end on his slender neck, snapping it instantly.

His strange fate seemed to have no effect on the rest of the charging monsters, although the terrible noise startled them. Then firing with deadly accuracy, both the aborigine and white man dropped several more of them on the beach. A hullabaloo of anguished yells clove the air, and just when the men were preparing to fire some more, the kangaroos apparently recognized their masters' shrill cries of warning, for they abruptly skipped into the bush some distance down the beach.

"Hold it, Bidgee!" shouted Laughlin. "They'll try something else now."

The plant-men now abandoned the unhealthy stretch of open beach, and took to the fringe of bush that skirted the lake shore. Wonderingly, Laughlin awaited their next move, for there was no telling to what measures their ungodly psychology of fleshless brain would prompt them now. Peering around the bole of the tree, Bidgee and he caught an occasional view of the plant-men making their tortuous way forward from tree to tree. Yet, they were too far away to risk wasting shells.

Though he knew it was too early to expect it, Laughlin's ears were strained to catch the powerful drone of the autogiro. Anxiously, he cast a quick, searching glance toward the end of the valley where low hills and brightening sky met. Webby probably was still sweating and

swearing in his exhausting flight over the alkaline dusted desert. Then a discreet mapping of twigs to his left gave the engineer fair warning of unseen maneuvering.

"Bidgee!"

"Uh?" came the black's grunt from the other side.

"They're spreading out fanwise in the bush. Get around to the beach-side of the tree with me so we can face them. We shan't have to worry about our rear."

And then suddenly—hardly before Laughlin had given his warning—the attack came from everywhere with a broadside of shrill yells. Kangaroos charged forward from several directions with startling leaps and bounds that brought them rapidly closer.

"Get those kangaroos first!" Laughlin yelled.

The bush was abruptly changed into a deafening hell of gunfire as the two men opened up on the big grey animals rushing them. The lust for battle got into the quick-witted American and he stood in the open, raking the enemy with accurate fire as well as with the colorful blasphemy of his native land.

Kangaroos crumpled to the ground, twitching. Others came on. Plant-men shrieked in helpless anger at the slaughter. Sensitive, gaudy-colored denizens of the gum trees fled screeching into the depths of the bush, listening in startled awe from safe perches. And then one of the plant-men stepped from behind a gum, swiftly hurling a red sphere. Laughlin got him, even in that short instant. He slumped in a spurting jet of emerald ichor.

But though the engineer dodged the ball of red, it struck the trunk of the bottle tree. A terrific surprise was in store for him. Thousands of little weaving cords of green string seemed to burst out of the red sphere, and entwine themselves about his head and neck. It was in vain that he tore madly, frantically at them. Another one came from somewhere. It exploded its hellish contents on his shoulder this time.

Through a maize of green, wriggling tendrils—ghastly things seemingly possessed of alien intelligence, entwining the more as he fought them—Lyle Laughlin saw the plant-men emerging from the bush at his helpless antics. He heard a shout of anger from Murrumbidgee. So, they got him too! Laughlin's choler began to sink into a dull despair. They couldn't have lasted much longer anyway, at that, for their shells were almost all gone. This, manifestly, was the end of it all.

Murrumbidgee and Laughlin stood in the middle of the baleful ring of plant-men, wondering what was coming next. Their automatics were snatched contemptuously from their helpless hands, and the tendrils wrenched from their bodies. Yet, Laughlin held his head high. He would be a conquered aristocrat—not a cringing underling. Suddenly, like a cool flood of white light, inspiration illuminated Laughlin's Slough of Despond. He turned to Murrumbidgee whom the plant-men were regarding in puzzlement: where had the black one come from?

"Listen, Bidgee. These devil-plants of Nature are a superstitious lot. Pound your chest and yell at them, 'Webster!' They'll think we're white gods and can change ourselves through magic. Go ahead!"

Murrumbidgee grinned, readily catching on to the idea. It tickled his native sense of humor, so that when he turned to the plant-men he filled his big chest out, striking it with an air of magnificent majesty, and barking at them: "Webster!"

Instantly, the chatter of small talk among them ceased, and a dead silence ensued. Laughlin would have smiled but for the gravity of the moment. Much depended upon the reaction which he knew was forming then in that awed quiet. A whispered murmuring began to pass among them, all eyes centered on the aboriginal. Rigidly, coldly, Laughlin stared into yellow-green orbs, mutely laughing at them for the growing triumph he knew was theirs, for the triumph of flesh and blood subterfuge over the naive credulity of fleshless life. They started to edge away. His heart gave a leap at the manifestation of growing wonder and awe. Yet, the balance of triumph was gloated over all too soon.

● Hafa, evidently a chieftain or priest among his tribe, stepped out from the crowd, directing a string of vehement yet unintelligible words at the plant-men, and pointing at Murrumbidgee. The tide now began to flow the other way. Laughlin looked into the aborigine's sombre brown eyes in some concern. Spirited replies began to echo from the crowd, holding something of Hafa's contemptuous tone.

"Look bad!" commented Murrumbidgee aside, showing a long face.

The circle began to edge in closer again, whether in disbelief of the white man's magic powers or greater belief in Hafa, Laughlin and Murrumbidgee did not know.

"Bidgee, get your back against this tree!" blurted Laughlin, quickly, doing so himself. "We've got to keep these devils here as long as possible until Webby comes. They're going to take us to the cave, else they would have killed us off long before this in revenge!"

When the first plant-men came for him, Laughlin unleashed a solid blow at the chin of the foremost one. He dropped like a felled gum tree. The aborigine followed by crushing a plant-man's queer substitute for a nose. More rushed forward. And then the two of them were in the midst of an unlovely brawl in which their own red blood flowed to mix with the ungodly green stuff of the plant-men. Flying fists and loud curses, intermingled with the sharp outcries of the plant-men, set up a loud racket. Stubbornly, they resisted all efforts to handle them by force, so that the plant-men began to smart under the pertinent remarks of Hafa. But the thing could not keep up forever, and Murrumbidgee and Laughlin at last gave in.

Up the beach they were taken by the mob toward the cave of stalagmites. Anxiously, Laughlin looked upward into the brightening sky for some sign of the autogiro. Time and again he searched the horizon. God, were they going to be killed just before Webby could arrive in his vain attempt to save them!

"Plentee bad, boss," murmured Murrumbidgee in discouragement, "mebbe die now, eh?"

"Tough luck, Bidgee. All we can do is hope that Webby will come before it's too late," answered Laughlin with failing courage.

They reached the cave entrance. The autogiro or even sound of its big motor was not in evidence yet. With fiendish animation for their kind, the plant-men hastened about the cave, mixing rude dishes of white substance with water from the quickening stream that flowed into the black depths of the huge cavern. Others came into the entrance way, carrying kauri pine logs which they floated

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(Illustration by Paul)

With all of his strength he heaved a rock straight away from him. With a rush his body moved backward. Another thrown rock . . . another . . . another . . .

THE ASTEROID OF GOLD

By Clifford D. Simak

● It has been said with some truth that successful exploration of new lands must be made by young men. For aside from the careful planning that is necessary, the most important element in exploration is the ability to meet the numberless new conditions that arise and to take advantage of them.

Certainly that should also be true in the exploration of space and on other worlds. The man from earth whose mental habits are fixed will have great difficulty in accustoming himself to the peculiarities of areas of no gravitation; of worlds on which the atmosphere, temperature and other natural conditions are so different from those on the earth. It may well be that success or disaster will depend on quick thinking in a crisis, which means the ability to take instantaneous advantage of an unusual situation.

This story, short but exciting, is a case in point.

● "After this charge we'll knock off for eats and sleep," Vince Drake suggested to his brother.

Vernon Drake nodded.

"I've got the jitters from wearing the suit for such a long stretch," he said. "I'm afraid we're overdoing the work a bit, Vince."

"It's a tough racket," his brother agreed, "but the sooner we get this load to earth, the quicker we can buy *Space Pup II*."

The two moved over the rocky surface of the asteroid in apparently effortless leaps, heading toward the *Space Pup*, which squatted like a silver monster against the drab monotony of the little world. Here the gravity was slight, so slight, in fact, that the brothers wore ropes about their waists while at work, with the other ends fastened to the *Space Pup*. The ship was securely anchored to the planetoid with magnetic plates. Otherwise some slight disturbance might have sent it off into space.

A man, putting his full strength into a leap, could easily have torn himself from the face of the rocky little world and hurled himself beyond its attraction. Thus the ropes attached to the man and the ship. It would have been no joke to inadvertently hop off the tiny slab of rock and be unable to return. They had at first experimented with weighted shoes and then with magnetic plates attached to the soles, but both of these devices had proved cumbersome and awkward.

Overhead the stars moved steadily in the velvety blackness of absolute space. The asteroid, nothing more than a slab of rock some five miles in length, half as wide and approximately four miles thick, was tumbling rapidly end over end through space. Here one was afforded the astounding spectacle of observing the constellations march in orderly procession against the curtain of blackness which enveloped the airless little world.

Descending over the sunward horizon could be seen the Twin, only a matter of some fifteen miles distant. The two tiny slabs of rock, revolving about each other, made up a part of the asteroid belt, all that remained of a mythical planet between Mars and Jupiter (which must have disrupted into the thousands of tiny fragments many millions of years before).

Here and there in the blackness loomed dark splotches, some shining faintly with reflected light from the distant sun—other members of the belt. At times wandering chunks of rock hurtled across space, some passing close to the asteroid upon which the two brothers were located. At times showers of tiny meteors, travelling at bullet-like speeds, bombarded the little island of space. There was danger in plenty, but the stakes were high and the brothers braved the dangers.

Two slabs of rock revolving about one another, true twins of space . . . . . but the Twin was only rock, while the one upon which Vince and Vernon Drake were conducting their mining operations was shot through and through with yellow veins of gold. The ore was rich, unbelievably rich, so rich that it practically crumbled under one's fingers. The price of one cargo alone would run into six figures. A treasure house in space! A treasure hoard of the void!

The brothers reached the ship and Vince knelt to connect the wires to the detonator. The nitro was planted in shallow holes, with care taken that the charge was not excessive. With the slight gravity, too large a charge would simply blast a portion of the ore-bearing slab into space, possibly to be lost forever. This had happened several times before they had learned just how much nitro to use.

"Hang on!" cautioned Vince.

Vernon grasped a rung set in the side of the *Space Pup*. Vince slid his arm through a similar rung and with his free hand shot down the plunger of the detonator.

There was no noise, only a slight flush where the charges were planted. The planetoid trembled violently beneath their feet. The *Space Pup* quivered and tugged at its magnetic moorings as the rock beneath it shook to the charge of the explosive. About a half mile away, where the charge had been set, a shower of small rock fragments sailed upward, but they did not drop. Out and out they sailed until they were lost to view, each becoming a separate unit in the mass of debris which formed the asteroid belt.

"Now into the *Pup*," exclaimed Vince, "for some eats

and a good long sleep. We've done a lot this shift."

"The thing I look forward to is getting out of this suit." declared Vernon.

He turned toward the door and as he did so he cast a glance upward. He stopped short in astonishment.

"Vince, look!" he cried.

Looming out of the void, blotting out a portion of the sky, a huge, black ship hung almost directly above them. There had been nothing to apprise them of its coming. It had simply slipped out of the blackness of space and suddenly was there, hanging above the tiny world. They had seen no rocket blasts.

Their earphones rang as an imperative tone cut in upon their receiving sets.

"Stay where you are. Don't move. We are going to land and we have guns on you."

The ship was speaking to them.

"Who the hell are you?" demanded Vernon.

And the answer came.

"Max Robinson, of the Space Ship *Star Wanderer*, speaking."

Max Robinson, of the *Star Wanderer!* The faces of the two brothers paled under their helmets. The most notorious raider of the space lines! Plunderer extraordinary. Cutthroat bandit of the void. How had he learned of the wondrous treasure on the little asteroid?

● There was nothing to say. The two young miners at first did not realize the true significance of this visit from Robinson. It all came so suddenly that it was impossible to think clearly, impossible to grasp the true possibilities of the situation.

"You damned robber!" said Vernon bitterly.

He felt his brother's hand upon his arm, squeezing with a vise-like grip.

"Men don't talk like that to Max Robinson," the voice came coolly, unflustered, "and get away with it."

Warned by the pressure on his arm, Vernon did not reply.

The two stood silently, watching the great craft settle slowly to a berth only a short distance from where the *Space Pup* lay. Through the lighted ports they could see men in the ship, while here and there heads were outlined against the circles of light, men off duty looking out upon the tiny world where they had landed.

Smoothly a gangplank came down and the outer door of an air chamber swiftly unscrewed and swung free.

"Come into my ship," said the voice of Robinson, "and come peaceably."

There was a horrible threat in the words. The two knew there never would be a moment, except perhaps when they were actually in the air chamber, that they would not be under the guns of the vessel.

In long hops they moved forward and set foot on the gangplank of the pirate ship. There they halted to unfasten the ropes about their waists.

"What are you stopping for?" growled Robinson.

"To unfasten our safety cables," Vince explained. "The gravity is so low here we anchored ourselves to our ship."

Robinson chuckled.

"Bright idea," he applauded. "I'll never forget the time one of my men jumped off one of these lousy little worlds. We scouted around for hours before we picked him up. He was dead."

They could hear the raider chuckle again, deep in his throat.

"Scared to death," he explained.

The brothers did not answer; neither of them at the moment could find anything particularly funny about a man being frightened to a point where death claimed him. With their ropes free they stepped up the gangplank into the air chamber. Noiselessly the door swung against the port, spinning into the threads. There was a sharp hissing, continuing for several minutes, then the inner door slipped its threads and swung open.

Vernon again felt the warning pressure of his brother's hand as they stepped out of the air chamber into the interior of the ship. Several members of the crew sprang toward them, ran swift hands over their inflated suits.

"That's all right," said Vernon, "we have no guns."

The men dropped back and the brothers unfastened their helmets and swung them back on their rear hinges. They closed the air tank valves and the suits went limp, hanging loosely about them.

Their eyes, roving over the ship, saw that it was extremely modern, equipped with many of the new inventions for comfort and safe space travel.

Six members of the crew stood in the room with them. They were a hardfaced lot; scum drafted from all the infamous space ports of the worlds; perhaps many of them criminals hiding from justice.

"The captain wants to see you immediately," said one of them.

"Mind if we take off our suits?" asked Vernon. "They aren't comfortable after you've worn them for awhile."

"Don't see that would hurt any," grunted the man. "Hurry about it, though."

Quickly they unfastened the suits and stepped from them, leaving them on the floor.

"The captain ain't one to be kept waiting," the man explained.

The two followed the man along a central corridor to the forward end of the ship. Before a door their guide stopped and knocked.

"Come in," commanded the voice they had heard over their receiving sets.

The guide swung open the door and motioned the others to step forward. As they did so, the door closed behind them and they stood alone, face to face with Max Robinson, cruelest, and most hunted space raider of the system.

They saw a man attired in a colorful uniform of powder blue, adorned with gold buttons, and with a red circle as a breast insignia. His forehead was high and his chin square, but not over-emphasized. A squat nose hulked above the slightest suggestion of a mustache and the lips were full and well formed. It was such a face as might have belonged to an ordinary, everyday business man of the Earth . . . . . until one looked at the eyes, and there the brothers saw cold calculation and insane cruelty.

He sat behind a large desk of beautiful carved stone, which was at once recognized as Martian art. Perhaps the desk had been part of the loot taken from some flaming homestead upon which Robinson and his crew of vandals descended to obtain a cargo of food. Upon the walls of the room hung paintings, specimens of the best art of the world. Held in wall brackets were other works of art, vases and statues. A heavy rug carpeted the floor.

"You like my office?" queried Robinson.

"It is appointed more tastefully than I would have imagined," replied Vince and the implication of his words was not lost upon the man behind the desk.

"When you become more thoroughly acquainted with me," he purred, "you will receive many surprises."

"Doubtless," said Vince.

Robinson's eyes narrowed. He seemed on the point of speaking sharply, then appeared to change his mind.

"Doing some mining?" he asked.

"No, exploring," lied Vince.

"Find anything?"

"A little lead."

Lead or Gold?

● Robinson clucked with mock sympathy.

"Too bad," he said, "too bad. Funny you would stay on one asteroid so long when all you found was a little lead. We saw you here 20 days ago when we passed by. When we picked you up again this time we thought you might have found something, so we dropped down."

Vince said nothing. There was nothing to say.

"Been doing a lot of blasting, too," observed the pirate. "In one place. That's funny. Seems to me you would blast a lot of test pits if you were just exploring."

"We were hopeful of finding something really worthwhile," explained Vernon. "Had just about decided to quit. If we find nothing from this last shot we won't do any more exploring here. We've wasted too much time here as it is."

"You're right," said Robinson and his voice was silky. "You won't do any more exploring . . . . . here or on any other asteroid."

"What do you mean?" asked Vernon.

Robinson did not seem to hear the question. He leaned forward over the desk and beat a clenched fist on its polished top.

"What did you find?" he bellowed.

"Lead," declared Vince.

The pirate picked up a small hammer and tapped a gong which squatted on his desk. The door opened and the man who had escorted the brothers to his captain stepped into the room.

"Make these gentlemen comfortable," commanded Robinson, "I am going out to have a look at their lead mine."

With an evil grin the man beckoned to the two, led the way out of the door and down the corridor. Far in the rear of the ship he halted and with a key opened a heavy door.

"In you go," he said.

The brothers stepped inside and the door creaked to, behind them. A moment later the key grated in the lock.

The room was bare of furniture except for four steel beds bolted to the floor. They were in the prison room of the *Star Wanderer*.

Vernon sat down heavily on one of the beds.

"What do we do now?" he asked.

"We have to wait and watch our chance," said Vince. "Maybe a chance will never come, but if it does, we'll make the most of it. We have to try not to antagonize Robinson, but we must stand upon our dignity. We must not let him believe for a moment we are afraid of him or afraid of what he might do to us. We have told our story and we are going to stick to it. We explored and we found lead. No matter if he takes tons of gold out of this place, it will always be lead to us."

Vernon grinned. The course suggested by his brother struck a chord of grim humor in him.

Vince seated himself on the bed and threw an arm over Vernon's shoulder.

"It's a tough break, kid," he said. "We are in the hands of the system's worst outlaw. We . . . . . "

He stopped, groping for words.

"Yes, I know," said Vernon and the two of them sat, staring straight at the grey wall in front of them.

Vince broke the silence.

"No use kidding ourselves," he said.

"None at all," agreed Vernon and his voice matched his brother's in tenseness.

"But we must always remember, kid," went on Vince, "that this isn't the first time a Drake has been in a tight spot. Some of them have gotten out of it and some of them haven't. But they always were Drakes. Not a snivelling coward among them. Not a single whimper for mercy. They've never forgotten their *savoir faire*. We've got something that Robinson never had and never can have and maybe we can beat him yet. He'll get small satisfaction out of this deal, no matter what happens."

They sat in silence again.

"Let's get some sleep," suggested Vernon, and Vince nodded.

"Good idea," he said and almost crunched the bones in his brother's shoulder with the grip of an understanding hand.

Dog-tired after hours in space suits, with the labor of wresting the golden fortune from the isolated little asteroid, they slept long and when they awoke a table bearing food stood in the room.

Vernon went to the single port-hole opening out of the prison room. Staring through it he could see feverish activity outside. Several cranes had been rigged up on the surface of the little world and the entire crew of the *Star Wanderer* seemed to be engaged in looting the planetoid of its golden hoard. It was a weird picture. Huge floodlights hastily erected lighted up the surface and made the place a plain of light and shadow. Space armor glistened and shone and sudden flashes spurted against the utter blackness of space as charges of explosives were fired. As each charge exploded the *Star Wanderer* vibrated from end to end. Men with heavy loads of ore toiled up the gangplank and into the airlock.

"What are they doing?" asked Vince sleepily from his bed.

"Come and see," invited Vernon.

Together the two brothers gazed out upon the scene.

"Our mine," said Vernon.

Vince nodded bitterly.

The two turned from the window and gave their attention to the food on the table.

"Poison," suggested Vernon, but Vince shook his head.

"Not Robinson's way of doing things," he declared. "Not bloody enough. No entertainment just sending two poor souls into eternity with a dose of strychnine. Robinson demands dramatics."

"I hope you're right," said Vernon.

"What does it matter if I am or not?" demanded Vince. "We have to eat, don't we? I'd rather eat poison every time in preference to starvation."

The food was good and the brothers, not having eaten for twenty-four hours, did justice to it.

● An hour later the same man who had conducted them to their cell appeared to take away the food.

"The captain says to tell you that he's found gold," he stated.

"Tell the captain that he's found lead," corrected Vince.

Hours passed. Ten times the Twin circled its mate in space. Still the work of mining the gold went on without a stop. Apparently Robinson had divided his crew into shifts and was working every minute. Great pits were being gouged in the surface of the planetoid. It was plain that the pirate would not halt mining operations until either the ore pinched out or until his ship was loaded to capacity.

Food was served the prisoners at regular intervals and they slept when they felt sleepy. Part of the time they spent at the port watching the activity outside. They requested a deck of cards from their keeper and whiled away hours playing for immense imaginary stakes. Neither of them mentioned what lay in store for them. Neither was there talk of escape. They knew there was no escape.

Escape from the ship without space suits meant death of the most horrible kind on the airless surface of the asteroid. Escape even with space suits would have to be made in the face of the pirates swarming outside. Even if they were able to safely reach the *Space Pup*, they knew that the *Star Wanderer* carried weapons which could blast the little ship out of existence.

The Twin had circled its companion eighteen times when they were summoned out of their prison to face Robinson again. As they walked up the corridor with their keeper stalking in their wake, Vernon's hand reached out and grasped his brother's for just an instant in a bone-crushing clasp. They were walking the road to death. Not for a moment was there a doubt in their mind of that. It was not after the manner of Max Robinson to allow men he had plundered to live. It was not well for him to have too many men in the system hating him with that fierce hate which can only come through personal injury.

But they walked with their shoulders square, with their chins up and in their swinging stride there was no hint of condemned men on their way to the scaffold.

Reaching the door of Robinson's office they did not wait for the guard to announce them. Vince beat a tattoo upon the metal.

"Come in," said the pirate, and once more they stood before the beautifully carved desk behind which sat the most feared, most hated man of the solar system.

Robinson regarded them with narrowed eyes, but his throat gurgled with cruel laughter.

"This asteroid of yours," he said, "is very precious. It is rich beyond dreams. It is full of gold."

"It is full of lead and, at present, cluttered up with damned robbers," said Vince softly.

Robinson seemed not to hear him, but Vernon, watching closely, knew that his brother's words had flicked him on the raw.

"It is regrettable," purred the pirate, "that having discovered such a vast deposit of gold, it should be lost to you. Under the circumstances your fortitude has been truly amazing. You have earned something better than the fate which I generally mete out to my . . . . . my . . . . . "

"Victims," suggested Vernon.

"That's it," beamed Robinson. "How did you think of the word?"

"I am way ahead of you all of the time," Vernon told him.

Robinson, however, was determined not to lose face by losing his temper. He had deliberately set out to taunt these men in an attempt to break them. He forced himself to maintain his light tone.

He wagged his head.

"I have taken all I want," he said. "More, perhaps, than I was rightly entitled to, for after all it was your mine. You discovered it. Still there is plenty more. I don't plan on returning, for there are many other such treasures in the system and the treasure itself means nothing to Max Robinson, rather the satisfaction of acquiring it."

"I hope," said Vince, "that you have derived considerable satisfaction from our explorations."

Robinson bowed, mocking them.

"Exactly," he said, "So I have decided not to kill you. I will leave you here with your mine. I have done enough wrong in my life. I am sorely in need of a few acts of mercy to counterbalance my sins."

Vernon stirred at Vince's side, but his brother reached out with a hand and gripped him. He steadied . . . . . waiting for the joker in Robinson's proposal.

"It is regrettable, however," stated the pirate, "that I am short on oxygen tanks. All I shall be able to give you will be three tanks. One for each of you and one to be divided between you as you see fit."

He stared solemnly at them.

"I am sorry to say, too, that I shall be obliged to take your ship out of your reach temporarily. If I left it where you could use it immediately, I fear that you might hasten to Mars and report my presence in this part of the solar system and it does not suit my plans to have my presence known for some time."

"Canny," declared Vince, "always the old fox."

Robinson grinned.

"I am going to take your ship and anchor it just a few miles away, on the Twin, where you can see it. One of my crew, a reputable instructor of mathematics in an Earth college before he committed a certain indiscretion and sought my protection, informs me that in the matter of a few thousand years the revolutions of the two asteroids will slow down and their orbits will close in, until they finally come together, joining one another. When that occurs you can reach your ship and return to Earth or Mars without harming me in the least."

"If the oxygen holds out," suggested Vince.

"I never thought of that," declared the pirate. "Maybe the oxygen wouldn't last that long"

"I'm afraid it wouldn't," said Vince.

"At least," pointed out the other, "you will have the satisfaction of always having your ship in sight when the Twin is in view."

A Desperate Chance

● As he spoke Vince leaped. His body, striking against the desk, shoved it backward and toppled the pirate out of his chair. The chair thudded against the carpeted floor. A vase tottered and fell from a shallow wall bracket, smashing to a thousand bits as it struck against a piece of statuary standing beneath it.

Vince, his body bruised by the force of its impact against the heavy desk, scrambled to his feet.

Vernon was vaulting the desk, disappeared behind it. With a single effort, Vince followed. Vernon and Robinson were locked on the floor in a tangle of flying arms and legs.

Vince flung himself into the struggle. His hands found and closed with a vise-like grip upon a massive throat.

There was a hammering of feet in the corridor.

"Quick," screamed Vince, "The trick Kan taught us."

Like a flash Vernon was on his feet. With a thud he placed his left knee into the small of Robinson's back, bearing down with his entire weight. Up and back Vince forced the upper part of the body and then, with his fingers still wrapped like tentacles of steel about the pirate's throat, put his full strength into a final thrust. There was a sharp snap as the vertebrae slipped out of place.

Vince released his grip and the body slumped to the floor.

The door burst inward. The brothers vaulted the desk as one man and were in the center of the dozen members of the crew before a gun could be used. With fists working like driving pistons the two went to the attack. Back and forth the fight surged across the room, with the pirates afraid to use their guns at such close quarters.

Vince accounted for his first opponent with a clean smash to the temple, but fumbled the second blow when his fist slid off the granite chin of the second man. Someone hit him hard over the heart and he retaliated with a blow that lifted the man off his feet and sent him staggering. A monstrous fist lashed at his head and almost floored him. Groggy as he was, he failed to duck another fist that smashed him against the wall. A face appeared in front of him and he flailed at it. A red smear appeared on the face as it slumped out of his line of vision. Then there were other fists hitting him . . . . hitting hard.

He caught sight of Vernon in the center of the melée in the middle of the room; saw a man wilt as his brother drove his fist into his throat; saw his brother topple as someone struck him from behind. Then a fist he could not duck, hard as he tried . . . . . a moment of dull pain, of flashing lights within his head and then . . . . . nothing.

He awoke with the glare of electric bulbs in his eyes and a throbbing pain in his head. Weakly he gained a sitting position and glanced about him.

Members of the crew thronged the room, all of them clutching weapons. A short distance away Vernon was struggling to his feet.

Walking unsteadily, his brother advanced toward him. Vince forced his aching body to rise and faced Vernon.

"It was a good fight," said Vernon, "while it lasted."

He grinned, wryly. Vince noted that one of his front teeth was missing and that bloodstains were about his mouth.

"Our last good fight, kid," said Vince.

The pirates rimmed them in a tight circle, watching them warily.

"Why don't they polish us off, kid?" asked Vince.

"Orders from Robinson," Vernon explained, "he is still alive."

"What's that!"

"Robinson is still alive."

"The hell you say," exclaimed Vince. "He's the first man I ever knew who could outlive old Kan's trick."

"Too tough to kill. Born to hang," said Vernon.

There was a stir at the edge of the circle which hemmed them in. It parted to let two men pass through. The two cradled a broken man in their arms.

Robinson glared at the brothers out of haggard eyes. His legs dangled grotesquely, seeming to reach despairingly toward the floor. His face was a twisted mask of pain and anger.

"You thought to kill me," he boomed.

"I am sorry," said Vince.

"Sorry!"

"Sorry I didn't succeed."

Robinson was muttering to himself.

"Delirious," said Vernon and Vince nodded.

But they were mistaken.

"Hard men to break," mumbled the pirate, "but loneliness on an asteroid, with a space ship just out of reach, will break you. Too bad I won't be here to see you fight over the third oxygen tank. Too bad I can't hear you scream when you watch the ship, so near . . . . yet just too far. Yes, it is too bad I can't wait to see you break."

Vince, his fists clenched hard at his side, took a step toward the man.

"Listen, Robinson, you won't be anywhere again. You are just a twisted cripple. You'll never walk again. There isn't a man in God's creation who can mend that back of yours. Your spinal column is shattered . . . . and you are hanging on by a thread. You will live, knowing every minute that just one little twist, one wrong move may send you to eternity. I hope to God you live a hundred years and fear every moment you will die.

"You are a broken man . . . . a useless worn-out shell. These hands broke you . . . . broke you, do you hear . . . . and I am damn glad we were able to do it . . . . you sneering, low-lived swine!"

"Take him out," commanded Robinson.

Men sprang forward, and pinioned their arms behind them, forcing them to the door.

● The Twin was rising over the rim of the tumbling world.

Two men, seated on a rocky ridge, arms thrown over one another's shoulders, stared up at it. Against its dull lustre could be seen a speck of silver, etched in familiar outline, the *Space Pup*.

"We'll see it just once more," said Vince, "Our oxygen won't last more than another revolution of the asteroids."

"What are we going to do with this?" Vernon touched the extra tank with the toe of his boot.

"You know what we are going to do with it."

Vernon nodded.

"We'll furnish a great newspaper story some day," he said, "if we ever are found. Two dead men in space suits with a tank full of oxygen at their feet. Mystery—why didn't one of them use the oxygen?"

"I have something I want to say," said Vince. "Hard to word it. Would think a fellow could say things to his brother . . . . but you know how it is."

"Sure. Better not say it. I feel the same way."

"You've been regular," declared Vince.

"Not so bad yourself," replied Vernon.

"It's not hard to die with you, kid. I always pictured us going out differently. Maybe with guns flaming in some out of way station or with the old *Space Pup* busted

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(Illustration by Paul)

The ring narrowed until its inmost ranks were driven, close-packed, into the fountain. "Are they going to commit suicide?" Markley asked.

The Dimension of Chance

By CLARK ASHTON SMITH

● We hardly ever stop to think that our whole mode of life, life itself, in fact, is possible only because we live in a world of natural, unchangeable laws. Barring accidents, we know that the sun will rise in the east, that gravitation will act, that friction will make structures possible, that rain will fall and crops will grow.

But of late a note of uncertainty has come into our calm acceptance of nature's invariability. The "Uncertainty Principle of Heisenberg" shows that the behavior of electrons cannot be predetermined. They do not move according to known cause or effect but by chance; and it is only when we are considering a great number of them that we can find any rational pattern in their behavior.

Suppose there were a world in which natural laws did not work with invariability; what sort of place would it be? Would it be habitable? Could intelligent life exist in a world in which, literally, "anything could happen next"? Mr. Smith in this engaging story tells us about the wonders of a world of that kind.

● "Better get that pea-shooter ready," warned Markley through the audiphone, from his seat at the controls of the rocket plane. "At this rate we'll come within range in a few minutes. Those Japs are good gunners, and they'll have a red-hot welcome for us."

Clement Morris, Secret Service operative, and college chum of Andrew Markley, his pilot, in a swift and dangerous chase, inspected the cartridge-belt of the new and incredibly rapid-firing machine gun, behind which he sat in lieu of the official gunner. Then he resumed his watching of the bright metallic speck that they followed in the thin, dark, stirless air of the stratosphere, twelve miles above the eastward-flowing blur that was Nevada.

They were beginning to overhaul the Japanese plane that had picked up the fleeing spy, Isho Sakamoto, near Ogden. Morris had been tracking down this preternaturally clever spy for months, under Government orders. Sakamoto was believed to have procured plans of many American fortifications, as well as information regarding projected army movements in the war against the Sino-Japanese Federation that had begun a year ago, in 1975.

The enemy rocket plane, descending unexpectedly from the isothermal regions, had rescued Sakamoto at the very moment when Morris was about to corner him; and Morris had immediately commandeered the services of his old friend Markley of the Air Corps, then stationed at Ogden.

Markley's rocket plane was said to be one of the swiftest in the entire Corps. In its air-tight hull, with oxygen-tanks, helmets and parachutes already donned in case of accident, the two men were speeding onward at an acceleration so terrific that it held them in their seats as if with leaden strait-jackets. Morris, however, was little less accustomed to such flights than Markley himself; and it was not the first time that they had hunted down some national foe or traitor in company.

They drove on between the dark-blue heavens and the dim Earth with its mottlings of mountains and desert. The roar of the rockets was strangely thin in that rarefied air. Before them the light of the stark sun, falling westward, glittered on the wings and hull of the Japanese as if on some great silver beetle. They were many miles from the usual lanes of stratosphere traffic; and no other vessels rode the windless gulf through which pursued and pursuer plunged toward the Sierras and the far Pacific.

Less than a mile now intervened betwixt the two vessels. There was no sign of overt hostility from the Japanese, which carried a heavy machine-gun equal in range to that of the American ship, and was manned by a professional gunner as well as by Sakamoto and the pilot. Morris began to calculate the range carefully. It would be a fair fight; and he thrilled at the prospect. The spy, at all costs, must not be permitted to reach San Francisco, where the enemy had established a hard-won base. If the fight should go against them, he or Markley, as a last resort, would summon other planes by radio from one of the American bases in California, to intercept Sakamoto.

Far off, through the inconceivably clear air, on the enormously extended horizon, he could see the faint notching of the Californian mountains. Then, as the planes hurtled on, it seemed to him that a vague, misty blur, such as might appear in sun-dazzled eyes, had suddenly developed in mid-air beyond the Japanese. The blur baffled him, like an atmospheric blind spot, having neither form nor hue nor delimitable outlines. But it seemed to enlarge rapidly and to blot out the map-like scene beyond in an inexplicable manner.

Markley had also perceived the blur.

"That's funny," he roared through the audiphone. "Anything in the shape of mist or cloud would be altogether impossible at this height. Must be some queer kind of atmospheric phenomenon—the mirage of a remote cloud, perhaps, transferred to the isothermal layer. But I can't make it out."

Morris did not answer. Amazement checked the somewhat inconsequential remark that rose to his lips: for at that moment the Japanese rocket plane appeared to enter the mysterious blur, vanishing immediately from vision as if in actual cloud or fog. There was a quick, tremu-

lous gleaming of its hull and wings, as if it had started to fall or had abruptly changed its course—and then it was gone, behind the hueless and shapeless veil.

"That's funnier still," commented Markley, in a puzzled voice. "But they can't shake us by flying into any damned mirage or what-you-call-it. We'll soon pick them up on the other side."

● Diving horizontally ahead at six hundred miles per hour, the vessel neared the strange blur, which had now blotted out a huge section of the sky and world. It was like a sort of blindness spreading on the upper air; but it did not convey the idea of darkness or of anything material or tangible.

Both Morris and Markley, as they neared it, felt that they were peering with strained, eluded eyes at something that was virtually beyond the scope of human vision. They seemed to grope for some ungraspable image—an unearthly shadow that fled from sight—a thing that was neither dark nor light nor colored with any known hue.

An instant more, and the blur devoured the heavens with terrible momentum. Then, as the plane rushed into it, a blindness fell on the two men, and they could no longer discern the vessel's interior or its ports. Ineffable greyness, like an atmosphere of cotton-wool, enveloped them and seemed to intercept all visual images.

The roar of the rockets had ceased at the same time, and they could hear nothing. Markley tried to speak, but the oath of astonishment died unuttered in his throat as if before a barrier of infrangible silence. It was as if they had entered some unfamiliar medium, neither air nor ether, that was wholly void and negative, and which refused to carry the vibrations of light, color and sound.

They had lost the sense of movement, too, and could not know if they were flying or falling or were suspended immovably in the weird vacuum. Nothing seemed able to touch or reach them; the very sense of time was gone; and their thoughts crawled sluggishly, with a dull confusion, a dreamy surprise, in the all-including void. It was like the preliminary effect of an anaesthetic: a timeless, bodiless, weightless hovering in the gulf that borders upon oblivion.

Very suddenly, like the lifting of a curtain, the blindness cleared away. In a strange, flickering, brownish-red light, the men saw the interior of the hull, and beheld each other's goggled helmets and leatheroid air-suits. They became aware that the vessel was falling gently and obliquely, with slanted floor. The rocket explosions had wholly ceased, though Markley had not touched the controlling lever. He could not start them again, and the entire mechanism refused any longer to obey his control. Through the ports, he and Morris saw a multi-colored chaos of outlandish and incomprehensible forms, into which the plane was descending slowly, with incredible lightness, like a downward-floating leaf or feather.

"I don't know what has happened, or where we are," said Markley. "But I guess we might as well sit tight. There's no need to jump—we couldn't go down any more safely with parachutes. But what the hell have we gotten into, anyway?"

"Can't say," rejoined his companion, equally dumfounded and at a loss. "Whatever or wherever the place is, it's not the state of Nevada."

Their descent toward the unknown, mysterious terrain seemed to occupy many minutes, and once or twice the vessel hung motionless for a moment, and then resumed its gliding with a jerk. Staring from the ports in ever-growing bewilderment, they began to distinguish separate forms and masses in the queer chaos of scenery. Irregular hills, mottled with grey, green, ocher and violet-black, lifted about them in the rufous light, and they perceived that they were settling into a kind of valley-bottom. The ground beneath them was partly bare, partly covered with objects that resembled vegetable growths rather than anything else. These plants, or plant-like things, as the plane settled closer above them, displayed a remarkable diversity of shape, size and hue, ranging from leafless, limbless stems to great tree-forms with a crowded foliation that suggested some impossible crossing of araucaria and banana. The whole impression of this flora, even at that first glimpse, was one of lawless variety and illimitable grotesquery.

The vessel slanted slowly down on an open, level tract, narrowly missing the tops of some of the taller growths. It landed with a light jar, little more pronounced than if it had been checked by the usual process of careful deceleration. Markley and Morris peered out on a scene that amazed them more and more as they began to perceive its innumerable oddities of detail. For the nonce, they forgot the Japanese rocket plane they had been following, and did not even speculate regarding its fate or whereabouts.

"Jumping Christopher!" cried Markley. "Mother Nature certainly was inventive when she designed this place. Look at those plants—no two of them alike. And the soil would give a geologist the nightmare." He was now peering at the ground about the vessel, which offered a remarkable mosaic of numberless elements—a conglomeration of parti-colored soils, ores, and mineral forms, wholly unstratified and chaotic.

It was mostly bare, and broken into uneven mounds and hummocks; but here and there, in patches of poisonous-looking clay or marl, peculiar grasses grew, with blades that varied in the same manner as the larger growths, so that one might well have imagined that each blade belonged to a separate genus.

Not far away was a clump of trees, exhibiting monstrous variations in their leafage, even when there was a vague likeness of bole or branch. It seemed as if the laws of type had been disowned; as if each individual plant were a species in itself.

● A stream of some water-like fluid, varying strangely from peacock blue to cloudy amber in its course, ran past the fallen plane and meandered through the valley toward a barren slope at one end, from which another stream appeared to descend and join it, flowing in a series of rapids and low cascades from a hill-top that melted indistinctly into the reddish-brown heavens.

"Well," observed Markley, after contemplating this *milieu* with a quizzical and slightly troubled frown, "the problem of how we got here is equalled in its abstruseness only by the problem of how we are going to get away. Somehow or other, we have fallen into a foreign world and are now subject to unfamiliar physical laws. Our nitrone fuel simply won't explode—there's something—hell knows what—that prevents combustion."

"Sure the tubes are all right?" queried Morris. "Maybe we've run short of fuel."

"Huh!" the tone was superbly contemptuous. "I know

this boat. There's nothing the matter with the rocket mechanism. And I loaded up to the limit with nitrone before we started. We could have chased Sakamoto to the Great Wall of China and back again, if necessary, without re-fueling, I tell you, we're up against something that was omitted from the text-books. Just look at this ungodly hole, anyway. It's like the scrambled hallucinations of a hundred cases of delirium tremens."

"I've monkeyed with hashish and peyote beans in my time," said Morris, "but I'll admit that I never saw anything like this. However, we're probably missing a lot by staying in the ship. What do you say to a little promenade? Sakamoto and his friends may be somewhere in the neighborhood, too; and if they are, I'd like to get a line on them."

Very cautiously, the two men unstrapped themselves from their seats and arose. In spite of their heavy garments, they felt a queer physical lightness that argued a lesser gravitation than that of Earth, and which no doubt accounted for the leisurely fall of the plane. They almost seemed to float about the hull; and found great difficulty in controlling and calculating their movements.

They had brought along a few sandwiches and a thermos bottle of coffee. These, their sole provisions, they decided to leave in the plane. Both carried automatic pistols of a new type, firing fifteen shots with terrifically high-powered ammunition, and having almost the range of rifles. Making sure that these pistols were ready in their holsters, which formed part of the leatheroid garments, and re-testing their oxygen-tanks and helmets, the men opened the sealed door of the hull by means of a spring apparatus, and emerged.

The air of the valley, as far as they could tell, was still and windless. It seemed to be quite warm, and they were forced to shut off the heating-mechanism in their suits, which they had turned on against the zero of the stratosphere. Almost vertically overhead, a heavy and lop-sided sun glared down, pouring out its light like a visible flood of reddish-brown liquid. A few clouds, with unearthly forms, floated idly about the sun; and far off in the lower heavens, above dim slopes and crags, other clouds went racing by as if driven by a mad tempest.

Trying to determine the course of their descent into the valley, Morris and Markley perceived an aerial blur at one point in the heavens—a blur similar to, and perhaps identical with, the one into which they had flown above Nevada. This blur, it occurred to Markley, was perhaps formed by the meeting or overlapping of two different kinds of space, and was the entrance between their own world and the alien dimension into which they had been precipitated. It was visible in the reddish air like the "ropiness" or cloudy nucleus that sometimes appears in a clear wine.

"Which way shall we go?" queried Markley, as he and Morris surveyed the valley on all sides, perceiving much that they had not seen from the plane. At the end that had been previously hidden, the vari-colored stream emerged from a narrowing defile of madly-tilted cliffs and pinnacles, hued as with petrified rainbows. On both sides of the valley were long, irregular slopes and barren bluffs, looming vaguely above areas of fantastic forestation. One of these areas, lying on the right hand, approached in a sort of arc to within a hundred yards of the rocket plane.

"I move that we head for the nearest timber," said Morris, indicating this mass of grotesquely varied growths. "I have a feeling, somehow, that I'd like to get under cover as quickly as possible. There's no telling, of course, but I have an intuition that Sakamoto and his compatriots are somewhere in the vicinity."

"Their visibility is pretty poor, if they are," commented Markley. "We may have lost them altogether—maybe they got safely through that atmospheric blind spot, or fell into another and remote section of this ungodly world."

"Well, I'm not taking any more chances than I have to. I don't care for the idea of a soft-nosed Japanese bullet in the back."

"If rocket fuel won't explode in this world, there's no certainty that cartridges will either," Markley pointed out. "But anyway, we might as well take a look at the woods."

CHAPTER II
The World of Chance

● They started off toward the forest, trying to control the absurd lightness that sent them bounding for twenty feet or more. After a few paces, however, they found that their weight was increasing rapidly, as if they had entered a zone of stronger gravitation. They took one or two steps that were almost normal—and then floated off in ludicrous leaps of a dozen yards that were checked suddenly as if by another belt of increased gravity.

The trees, which had seemed so near, retreated in a strange and disconcerting fashion. At length, after many minutes of variable progression, the men saw the wood looming immediately before them, and could study its details. High in the heavens, above all the other growths, there towered two incredibly elongated boles such as might be seen in the delirium of hashish; and about them a medley of lesser forms, no two of which displayed the same habit, leaned and crawled and squatted or massed themselves in monstrous tangles.

There were single plants that combined enormous moon-shaped leaves with others that were fern-like or lanceolate. Gourd-like fruits grew on the same tree with others in the form of tiny plums and huge melons. Everywhere there were flowers that made the most ornate terrestrial orchids appear simple and rudimentary as daisies in comparison.

All was irregular and freakish, testifying to a haphazard law of development. It seemed that this whole chaotic cosmos in which the men found themselves had been shaped from atoms and electrons that had formed no fixed patterns of behavior, and whose one controlling law was chance. Nothing, apparently, was duplicated; the very stones and minerals were anomalous. What further irregularities they would encounter, Morris and Markley could not guess. In a world subject to chance, everything would be incalculable; and the action of the simplest natural laws would be wholly erratic and independable. A horror of this lawless world gradually arose in them.

So far, they had met nothing in the form of animal life. Now, as they neared the forest, a creature that was like a poddy and spider-legged serpent came down as if from the heavens on one of the preposterously tall boles, running swiftly. The men stopped toward the tree, trying to decide which end of this curious creature was the head and which the tail.

Astoundingly, like a mirage, the forest faded away with their change of position; and they saw its fantastic tops at a seeming distance of many hundred yards, in an oblique direction. Turning, they found that the whole valley, during their brief journey, had shifted about and had re-composed itself beyond all recognition. They were unable to locate the rocket plane for some moments; but finally, in an opposite quarter, and seemingly much further away than they had supposed, they discerned the gleaming of its wings and hull.

Before them, in lieu of the forest, was an open space in which the vari-colored stream had mysteriously reappeared. Beyond the stream arose plots of scattered vegetation, backed by opalescent cliffs.

"The late Professor Einstein would have been interested in this," remarked Morris. "Even the light must be moving at random, and sight images are traveling in zigzags and circles. Nothing is where it ought to be. We've gotten into a labyrinth of mirages."

"We'll be lucky if we ever find our way back to the old boat," snorted Markley. "Want to look any further for our Japanese friends?"

Morris did not answer at once. His eye had caught a silvery glint, close to one of the far-off plots of vegetation beyond the stream. He pointed it out to his companion silently. Three dark, moving specks, doubtless the figures of men, appeared beside the glint as they watched.

"There they are," said Morris. "Looks as if they were starting for a *pasear* themselves, or were just returning from one. Shall we try to interview them?"

"You're the captain, old scout. I'm game if you are. Lead on, MacDuff."

Temporarily forgetting the highly illusive refraction of the weird scenery, they started toward the stream, which appeared to be only a few paces away, and which they could easily cross at a step if the light gravity prevailed in its neighborhood. By another astonishing shift, the stream moved away from them, reappearing in a different quarter, at a considerable distance; and the gleam of the Japanese rocket plane and its attendant human specks had vanished from view.

"I guess we'll play tag with some more mirages," opined Markley in a disgusted tone. "Even if guns will shoot in this crazy world, there's small likelihood that we could hit anyone, or that anyone could hit us."

More deeply bewildered and bemused than ever, they pressed forward, trying to re-locate the enemy vessel. The changing zones of gravity made their progress erratic and uncertain; and the landscape melted and shifted around them like the imagery of a kaleidoscope.

A clump of crowded vegetation, rearing its anomalous boles and monstrous leafage as if from nowhere, leaped into place before them. Rounding the clump, which seemed relatively stable, they came suddenly in sight of the Japanese, who, in air-suits and helmets, were now standing on the opposite brink of the apparently nearby water.

● Whether or not Sakamoto and his fellows had seen the Americans was uncertain. They were staring in the direction of Morris and Markley, who did not wait for decisive proof that the enemy had perceived them, but drew their automatics and aimed quickly, each choosing one of the two nearest figures.

Somewhat to their surprise, in view of the various baffling and topsy-turvey phenomena they had encountered, the pressure of the triggers was followed by a sharp double report. The Japanese, however, did not seem to realize that they were being fired at; and their apparent nearness and relative position were no doubt illusory.

Markley and Morris, recognizing the probability of this, did not shoot again, but sprang forward in an effort to approach the deceptive figures. The Japanese vanished; the whole valley seemed to swirl in a semi-circle and rearrange itself; and the two Americans found themselves at the foot of that barren slope from which, in their first remote view of the place, a second stream had appeared to descend and join the meandering creek.

From their new and close vantage, however, there was only one stream, which, flowing down the valley-bottom against the barring slope, ran turbulently *uphill* in a series of skyward-leaping rapids and cascades!

Too astonished even for profanity, they stared without comment at this unique reversal of what they were accustomed to regard as natural law. For a considerable distance on either side of the stream, the acclivity was hollowed and worn smooth as if by landslides or a process of slow attrition. Occasionally, as the men stood watching it, a pebble, a lump of conglomerate soil, or a few particles of grit were loosened from the ground, to roll heavenward rapidly and disappear beyond the ragged crest of the slide together with the cascading waters.

Drawn by thoughtless curiosity and wonder, Morris stepped toward the beginning of the slope, which was perhaps ten feet away. It was like stepping over a precipice. The ground seemed to tilt beneath him, and the slope fell like an overturning world, till it pitched *downward* at a steep angle with the sky at its bottom. Unable to arrest his strange fall, he slid sidelong into the rushing water, and was carried roughly and dizzily down the rapids and over the cascades. Half-dazed and breathless, he felt that he was shooting across the world's rim toward a nether gulf in which hung the fallen sun.

Markley, seeing his companion's weird fate, also started toward the acclivity, with some dim instinctive idea of rescuing Morris from the inverted stream. A single step, and he too was seized by the skyward gravitation. Slipping, rolling and bumping as if in a steep chute, and unable to regain his foothold, he slid along the topsy-turvy slope, followed by a shower of detritus, but without falling into the water.

He and Morris, passing the rim of the slide as if hurled toward the reddish-brown sky that was now *beneath* them, each experienced another bewildering *bouleversement*. Morris found himself floundering in a sort of hilltop pool, where the final cascade foamed itself into quiescence; and Markley, stunned and sprawling but with unbroken bones, was lying on a pile of rubble such as would ordinarily gather at the bottom of an escarpment.

Morris scrambled from the pool, which was only waist-deep, and helped Markley to his feet. The local gravity was almost normal from a terrene viewpoint; and plainly all objects that were drawn skyward along the deficiently attractive area were promptly arrested when they reached the top. Headlong and turbulent, the cascade curved over the rim into the level pool.

The earth-men, finding themselves quite unhurt, proceeded to examine their air-suits and helmets for possible damage. Since the local atmosphere was untested, and might well possess deleterious properties, a rift in the

leatheroid fabric would perhaps be a serious matter. The suits, however, were intact, and the tubes that supplied oxygen from flat tanks behind the shoulders were in perfect condition.

The height that they had climbed in a fashion so singular was really part of an uneven plateau that appeared to surround the whole valley. The plateau was divided by long hummocks of mottled soil and stone, which rose gradually into bleak uplands and low mountains at a seeming distance of several miles.

From their present vantage, the valley below was an immense sink. They saw the entire course of the tortuous stream, the areas of *outre* vegetation, and the gleaming of some metallic object which they assumed to be their own rocket plant. The Japanese plane was not visible, and was perhaps hidden by one of the plots of forestation. Of course, remembering the optical distortion and displacement which they had encountered so often in their wanderings, they could not be sure of the actual distance, perspective and relationship of the various elements in this bizarre scenery.

● Turning again from the valley, they considered the plateau itself. Here the stream, running in a normal and tranquil fashion, entered a ravine and disappeared. The whole landscape was intolerably drear and repellent, with the same chaotic mineral formation as the valley, but without even the anomalous plant-life to relieve its deadly desolation.

The lopsided sun, declining very swiftly, or else subject to the nearly universal optic transposition, had already fallen half-way from its zenith toward the horizon of amorphous mountains in what the men estimated to be less than an hour. The clouds had all melted away, but far off, above the valley, they could still discern the mysterious aerial blurred spot.

"I guess we'd better mosey back toward the boat," said Markley, after viewing the barren scene with obvious horror. "But we won't try to go the way we came. If we follow the rim of the valley, we ought to find a place where the gravitation won't drag us the wrong way."

Made doubly cautious by their disconcerting experiences, they started along the verge of the sink. For some distance, the ground was littered with detritus, and even with loose boulders that had rolled upward to be arrested at the top. When they came to the end of this rubble, they surmised that they were beyond the belt of reverse gravitation.

Following the rim toward a point where the slope became easier and more gradual, they came suddenly into a zone of heavier gravity than any they had yet entered. At one step their weight appeared to treble; a crushing burden descended upon them; and they could lift their feet only with immense effort.

Struggling against the uncanny pull of the strange earth, and on the verge of panic they heard an indescribable clattering and rustling behind them, and turned their heads laboriously, in much startlement, to ascertain the cause.

Emerging as if from empty air, a concourse of unimaginably monstrous beings had gathered at their very heels on the bleak verge of the plateau. There were scores or hundreds of these entities, who, whether mere beasts or the analogues of humanity, were no less various and freakish in their conformation than the weird flora of the valley-bottom.

Obviously, there was no common norm or type of development as in terrestrial species. Some of the entities were no less than twelve or thirteen feet tall; others were squat pygmies. Limbs, bodies and sense-organs were equally diversified. One creature was like a prodigious moonfish mounted on stilts. Another was a legless, rolling globe fringed about the equator with prehensile ropes that served to haul it along by attaching themselves to projections. Still another resembled a wingless bird with a great falcon beak and a tapering serpentine body with lizard legs, that glided half-erect. Some of the creatures possessed double or triple bodies; some were hydra-headed, or equipped with an excessive number of limbs, eyes, mouths, ears and other anatomical features.

Truly these beings were the spawn of chance, the random creations of a lawless biologic force. A horde of fabulous, fantastic, nightmare improbabilities, they surged forward upon Morris and Markley, uttering a babel of wordless sounds, of cacklings, hisses, clucks, ululations, roarings and bellowings. Whether they were hostile or merely curious, the men could not decide. Both were petrified with a horror beyond the horror of evil dreams.

The leaden gravitational drag, rendering the least movement slow and toilsome, re-enforced their sensation of nightmare. Laboriously they drew their pistols, and half-lifting them at the oncoming rout, pulled the triggers. The reports were dull and muffled; the bullets flew with visible slowness, and rebounded harmlessly like tossed pebbles from the monsters that they struck.

Like a stampeding herd, the throng of biologic horrors was upon Morris and Markley. Battling against the gravity as well as against the loathsome bodies and members that engulfed them, they were borne irresistably along by the seething mass. Their pistols were torn from their hands, they saw hideous faces and faceless things that milled about them like a torrent of the damned in some nether circle. Occasionally, in broken glimpses, they saw a disordered landscape of amorphous rocks, with pools and streams of fine sand, and sudden, fortuitous vegetation like mad mirages, through which they were being carried.

The origin of the monsters, their purpose, their destination, their intentions in regard to the earth-men, were enigmatic as the riddles of delirium. Resistance was futile; and Morris and Markley gave themselves up to the rushing motion of the throng, in the hope that some opportunity of escape would ultimately offer itself.

CHAPTER III

The Masters of Chance

● They seemed to go on for hours. The gravitation still varied, but was often constant over large areas. The sun, instead of sinking further, rose again to the zenith. Sometimes there were brief intervals of darkness, as if the light had been shut off by some queer fluctuation of atmospheric properties. Puffs of wild wind arose and died. Rocks and whole hummocks seemed to crumble abruptly on the waste. But through all this chaos of conditions, the monstrous horde poured onward with its captives.

Apparently the earth-men had fallen in with a whole tribe of these anomalous creatures, who were perhaps migrating from one zone of their random world to another. At least, such was the explanation that suggested

itself in lieu of positive knowledge.

Markley and Morris became aware that the ground was slanting downward. Over the heads of the monsters, they saw that they had entered a flat, sloping valley. Rough mountains, perhaps the same that they had beheld from the rim of the sink, appeared to loom at no great distance above them.

The low valley debouched in a sort of shallow, crater-like hollow. Here the horde suddenly arrested its onward rush and began to spread out in a curious manner. Markley and Morris, now able to work their way forward, saw that the creatures had arranged themselves in a ring about the slopes of the circular hollow, leaving a clear space at its bottom.

In the center of the vacant space, a singular phenomenon was manifesting itself. A fountain of fine, lucless powder rose from the stone and soil, attaining a height of three feet. Slowly it widened and rose higher, preserving the form of a round column. Its top mushroomed into a vague cloud, spreading above the heads of the assembled throng and floating skyward. It was as if some process of molecular dissolution were taking place, to form this fountain.

Markley and Morris were fascinated by the spectacle. Before them, the silent, circular crumbling of the ground went on, the column swelled to Titanic proportions, towering above the crater. Seemingly, too, the monsters were fascinated, for none of them stirred to break the ring-like formation.

Then, gradually, as the column of atoms increased, the horde began to surge forward. The ring narrowed till its inmost ranks were driven, close-packed, into the fountain by the pressure from behind. Visibly, as the creatures entered it, their limbs and bodies melted like bursting puff-balls, to swell the columnar cloud of dissolution that mounted skyward.

"Are they all going to commit suicide and take us with them?" Markley's voice was a horror-tautened whisper. He and Morris, caught in the forward ranks, were being forced slowly toward the fountain. Only two rows of the monsters now intervened; and even as Markley spoke, the bodies of the inmost row began to dissolve in the column.

The earth-men struggled desperately against the massed bodies that crowded from behind. But the living wall, close and implacable, as if bent on nothing but self-immolation, drove them downward inch by inch.

Overhead, the sun was blinded by the mushrooming column. The sky took on a madder-brown twilight. Then, with a suddenness as of some atmospheric legerdemain, the twilight blackened into Cimmerian darkness. A mad, elemental howling tore the air, a blind hurricane filled the crater, blowing as if from above; and bolts of lightning leapt upward from the ground, enshrouding with blue and violet fire the horrible horde of biologic anomalies.

The pressure behind the earth-men relaxed. A panic seemed to have seized the monsters, who were now dispersing in the bolt-riven darkness. The earth-men, fighting their way upward, stumbled over the half-charred bodies of those who had been slain by the lightning. By intermittent flashes, they saw, looking back, that the column of atomic dissolution still poured from the crater's bottom, to merge with the seething storm that had risen as if at random from nowhere.

Miraculously untouched by the lightning, Morris and Markley found themselves in the flat valley through which they had entered the crater. Most of the monsters had now disappeared, melting away like the shadows of a nightmare; and the last flashes revealed little but vacant soil and rock.

The lightning ceased, leaving the men in darkness. An irresistable wind, like a torrent of rushing water, bore them along through the Stygian night, and they lost all trace of each other henceforth. Often hurled headlong, or lifted bodily from the ground at the mercy of lawless, anarchic elements, they were blown apart like lost leaves.

Abruptly as it had begun, the tumult fell in a great stillness. The darkness dissolved from the heavens. Morris, lying dazed and breathless, found himself alone amid barren reaches of rock and sand. He could trace nothing familiar in the landscape. The mountains were lost to view, and he saw no sign of the fountain of molecules. It was as if he had been transported to another tract of this fantastic realm of chance.

Halloing loudly, but answered only by sardonic echoes, he started off at random in an effort to find Markley. Once or twice, amid the shifting, illusive imageries through which he wandered, he thought that he saw the mountains that had loomed beyond the crater of dissolution.

● The sun, changing its apparent position by leaps and bounds, was now close to the horizon, and its rays were indescribably dark and eerie. Morris, plodding doggedly on amid the delusive advances and recessions of the dreary landscape, came without warning to a flat valley that was somehow familiar. Before him the lost mountains re-appeared as if by magic; and going on, he emerged in the crater-like hollow.

Many of the charred monsters, slain by the electric storm, were strewn about the slopes. But the fountain itself was no longer active. A round, funnel-like pit, twenty feet in diameter, yawned dark and silent at the bottom of the hollow.

Morris felt the descent of an overmastering despair. Lost as he was in this awful trans-dimensional limbo, and separated from his comrade, whose fate he could not imagine, the prospect was indeed drear and hopeless. His whole body ached with accumulated fatigue; his mouth and throat were afire with corrosive thirst. Though the oxygen still poured freely from its tank, he could not tell how much of the supply remained. A few hours, at most, and then his ordeals might end in asphyxiation. Momentarily crushed by the horror of it all, he sat down on the crater slope in the rusty-brown gloom.

Curiously, the twilight did not darken. As if in a reversed ecliptic, the sun returned slowly into the heavens. But Morris, in his despair, hardly heeded this *outre* phenomenon.

Staring dully at the re-illumined ground, he saw the appearance of several grotesque, anomalous shadows that fell past him on the slope. Startled from his lethargy, he sprang up. A dozen or more of the monstrous people had returned. Some of them were gnawing the cindery bodies of their late companions; but three, as if disdaining such fare, were closing in upon Morris.

Even as he turned, they assailed him. One of them, a headless thing with ropy arms and a puckered, mouth-like orifice in the center of its gourd-shaped body, tried to drag

him down with its frightfully elongated members. Another, which might have been some heraldic griffin minus wings and feathers, began to peck at his air-suit with its tremendous horny beak. The third, which was more like a horribly overgrown toad than anything else, hopped about him on the ground and mumbled his ankles with its toothless mouth.

Sick with nausea, Morris struggled against them. Time and again he kicked away the toad-like creature, which returned with noisome pertinacity. He could not loosen the ropy members of the headless horror, which had wrapped themselves about him in plastic folds. But his worst fear was that the griffin would tear open his leatheroid garments with its slicing beak. He hammered the huge bird-shaped body with his fists, driving it away repeatedly; but as if mad with rage or hunger, it re-assailed him. His legs and body were sore in a dozen places from the blows of the cruel beak.

Beyond his attackers, he caught involuntary glimpses of the horrid feast that was being enjoyed by their fellows. It was like the feeding of harpies in some infernal circle; and Morris could surmise his own imminent fate all too clearly. He saw that several of the feeders, quitting their half-eaten provender, were turning in his direction as if to join the three assailants.

Instinctively, as he fought on, he heard the sound of a measured drumming from above. The sound drew nearer and ceased. In a turn of the eddying combat, he saw that two gigantic beings had arrived among the monsters, and were standing a little apart, as if watching the gruesome orgy with detached interest.

Even amid the frightful preoccupation of his struggles, he noticed a strange thing. The new arrivals, alone of all the life-forms that he and Markley had met in this erratic world, seemed to approximate a common type of physical development. Both of them stood erect, and their conformation was vaguely human in its outlines, except for the enormous wings, ribbed and leathery as those of ancient pterodactyls, which hung half-folded at their backs. Their coloration was a dark, bituminous brown, verging upon ebon blackness in the wings, and lightened somewhat in their heads and faces. They were massively built, with a stature of eleven or twelve feet, and aquiline, sloping, hairless heads that denoted a large brain-capacity. No trace of ears could be detected; but two round, luminous, golden-yellow eyes were set far apart in their faces above sphinx-like mouths and nostrils. Somehow they made Morris think of Satanic angels; but their aspect was not malign, and was wholly poised, aloof and dispassionate.

Such were the impressions that he received, without conscious assortment or definition at the time. Without interlude, the atrocious battle with the three monsters continued. Presently, however, one of the gigantic winged beings came with prodigious strides toward the earth-man and his attackers, as if to watch the uneven combat. Morris felt the regard of the great yellow eyes, which, inscrutable themselves, appeared to search him through and read the inmost secrets of his mind.

● The being stepped closer, lifting an enormous hand in a leisurely but imperious gesture. As if fearful or cognizant of a superior power, the loathsome assailants abandoned their efforts to drag Morris down, and slunk away to assuage their hunger on an un-preempted carrion that lay beside the pit in the crater's bottom.

A dreadful faintness surged upon the earth-man—a reaction from all the intolerable horrors and fatigues of the day. Amid the whirling darkness into which he slid, he saw the gleaming of two mesmeric golden eyes, and felt the firm grasp of giant hands that seemed to support and lift him.

An electric shock ran through him at their touch. Miraculously, his faintness cleared away, leaving him wonderfully alert. Strength seemed to flow into him from the mighty hands: magnetic strength, buoyant and preterhuman. The horror faded from his shaken nerves, he was no longer lost and bewildered, but was filled with a mystic confidence.

The experience that he now underwent was perhaps the strangest of all that befell him in the dimension of chance. Also, it was the hardest to remember or describe.

Beneath the thrilling touch of the winged being, whose hands held him firmly by the shoulders, he seemed almost to pass beyond his own consciousness. Thoughts that were not his own rose up and limned themselves with the clearness of actual visions or objective impressions. In some ineffable way, he shared for a moment the thoughts and memories of the being who had rescued him from the monsters. Whether or not an intentional telepathy was being exerted, he never quite knew; but alien vistas, beheld through unfamiliar senses, appeared to open before him.

The two winged beings, he knew, were members of a race that was far from numerous. They were the rulers of this outlandish world, the self-made masters of its incalculable forces and disorganized elements. Their evolution had been supremely difficult and painful. Through their own volition, they had risen from a state that was little higher than that of the unhappy monsters. They had developed faculties that enabled them to circumvent the lawlessness of their environment, to forecast its very randomness, and impose law and order on the ever-changing chaos. They had even learned to control their own development.

The nightmare hollow in which Morris stood had temporarily vanished. There came to him the sense of tremendous flight above strange horizons. He seemed to pass on lofty wings over wastes of chaotically piled and tumbled rocks with the being whom he knew as one of the Masters of Chance. Amid the shifting mirages of desolation, through distorting zones of air, above realms that pitched obliquely for immeasurable leagues, like the flattened side of some malformed planet, he flew unerringly to his destination.

Beyond the chaos, on tiered mountains that rose stupendously, he beheld the high and many-terraced citadels of the Masters. As if he had trodden their battlements, he knew the white walls of a majestically ordered architecture that defied the erratic formlessness of the world beneath, and imposed their harmonic sternness on the tumbled waste. He knew the terraces, lined with geometric rows of trees and flowers, in which, by some miracle of horticultural mastery, the random flora had been subdued and had taken on the characters of type and spe-

Dimly, to the limit of his human thought-capacity, he understood something of the Masters. Their powers were those of dynamic will, of magnetism and sense-development; and they did not depend entirely on mere physical science or machinery. In former ages, they had been

more numerous, had ruled a larger area of that unstable, incalculably treacherous world. It seemed that the apex of their evolution had passed, though still powerful, they were menaced more and more by the beleaguering forces of cosmic anarchy.

Such were the things that Morris learned in that moment of communion with his rescuer. Returning to his own proper consciousness, he felt also that the telepathic interchange had been mutual: the being had read his own history, his predicament of hopeless alienation in a strange world; and in some inscrutably benign way, was minded to help him.

He felt no surprise, whatever, at the more than *outre* happenings that ensued. Somehow, as if he shared the ability of his protector to read the future, all that occurred was familiar as a twice-told tale. In this bizarre but fore-known drama, the winged being lifted him gently but firmly, making a cradle of its vast arms, and spreading its ebon wings, mounted swiftly toward the misshapen sun. Its companion followed; and Morris knew, as they flew steadily above the changing zones of gravitation, above the dreary jumble of wandering mirages, that they were seeking for Markley.

In a dim, partial, way, he seemed to share the clairvoyance of the Masters, which enabled them to distinguish the real from the illusory amid the disordered refraction of their atmosphere. He, too, was gifted with a televisual faculty by which he could scan the remote or hidden portions of the waste.

● Sure and undeviating, the mighty leathern wings beat onward toward their goal. Amid the kaleidoscopes of desolation, there appeared the rough rim of the valley in which Morris and Markley had left their rocket plane.

Swifter grew the beating of the wings, louder was their drumming, as if haste were needed. A strange anxiety mounted in Morris, lest they should be too late.

Now they hovered above the valley, slanting groundward. The place had changed, in some fashion that Morris could not define to himself for a moment. Then he realized that certain of the ringing bluffs and slopes had crumbled away, were still crumbling, to form a moving sea of hueless sand. In places, columns of atomic powder mounted like geysers; some of the areas of forestation had fallen into shapeless heaps of dust, like disintegrated fungi. These sudden, erratic, localized decompositions of matter were common phenomena of the world of chance; and it came to Morris, as part of his mystic knowledge, that the order which the Masters had wrested from chaos was not wholly secure against their inroads.

Anxiously, with a breathless fear, he scanned the area into which the mighty being who carried him was descending on sloped wings. Markley was somewhere in that area, to which he had wandered back in a blind, bewildered search for his lost companion; and danger—a double danger—threatened him now.

As if with the keen, straight-seeing eyes of the Master, Morris discerned a rocket plane on the valley floor, and knew it to be the one that the Japanese had used. Seemingly it was deserted, and the moving tide of sand from the crumbling cliffs engulfed it even as he watched.

In the middle of the valley, he descried the glittering of another plane—the one that belonged to Markley. Four tiny figures were milling to and fro beside it, as if in wild combat. Upon them, unheeded, the deluge of dissolution was advancing swiftly. The sands rolled in crested billows. The trees swelled and soared to monstrous arboreal phantoms, and dissolved in pulverous clouds. Pillars of freed molecules built themselves up from the valley-bottom, and were shaped into ominous, floating domes that obscured the sun.

It was a scene of elemental terror and silent tumult. Across it, sloping and dipping, the wings of the Masters drummed, till they hovered above the knot of struggling figures.

Three men in helmets and air-suits were attacking a fourth, who was similarly attired. The weakness of the local gravity, however, made the combat less unequal than it might have seemed. Also, it served to lighten the blows which the contestants succeeded in delivering.

Markley, in great, twenty-foot leaps, was eluding the Japanese much of the time; but plainly he was tiring; and the three would corner him soon. Several automatic pistols, discarded as if empty or useless, were lying on the ground; but one of the Japanese had drawn an ugly, curved knife, and was watching his chance for a thrust at the darting figure of Markley.

In their desperate struggle, none of the four had perceived the arrival of the Masters. It was Markley who saw them first. As if stupefied, he paused in one of his rushes, and stared at Morris and the winged beings.

Two of the Japanese turned and also beheld the hovering figures. They stood as if petrified with astonishment or terror. But the third, intent on delivering a thrust with his wicked knife, had not seen them; and he flew in a long, aerial leap at Markley.

The second Master, hanging in air beside Morris' protector, raised his right hand and pointed at the flying Japanese. For an instant, his fingers seemed to clutch and hurl a great javelin of living fire. The javelin leapt and faded—and the Japanese, a shapeless pile of fuming cinders, lay at Markley's feet.

The other two, shielding their goggled eyes with their hands, as if the terrible lance of light had blinded them, rushed toward the oncoming storm of atomic disintegration. Before them, on the valley floor, a sudden pillar of dust ascended, swelling awfully as it ate the conglomerate soil. It seemed to topple upon them—and they were gone.

Morris, watching in wordless awe, felt that the lifting arms had been withdrawn—that his feet had been set on the ground. Close above him, the two Masters towered, with spread wings. As if an urgent voice had spoken aloud, he knew the things that must be done without delay.

"Come—we can start the plane!" he cried to Markley. "We've got to move in a hurry."

Markley, who had been staring at the Masters, appeared to emerge from a sort of trance.

"All right, if you say so—and if the fuel will explode," he agreed. "But before we go, I'd like to thank your winged friend for browning Sakamoto. I don't know how it was done; but he sure has a wicked jolt. That Jap would have laid me open like a gutted fish, in another split-second."

A sudden, howling wind blew down the valley, spreading the dust-billows like a blown spray, and lifting the atomic columns into a roof of doom. Swiftly the storm of dissolution gathered, rushing toward the plane.

Markley, following by Morris, sprang for the open

manhole. While Morris swung the heavy lid into place, his companion leapt to the control-board. As if by some miracle of chance, or some change in the unknown, interfering force, his pressure of the starting-lever was answered by the loud roar of discharging rockets. The plane lifted, acquiring momentum, till it soared above the seething valley.

Looking back through one of the ports, Morris perceived the two flying colossi, who hung aloof in the heavens, as if watching the departure of the plane. Serene, impassive, on poised wings, they floated beyond the atomic storm, which had already begun to subside.

He turned away with a strange awe, a reverential gratitude. Beneath Markley's skilful guidance, the plane was heading straight for the formless atmospheric blur that still blotted the reddish-brown sky.

Again Morris looked back. High, far and tiny, between the malformed sun and the chaotically strewn and riven world, the mysterious beings whom he knew as the Masters of Chance flew steadily on level wings toward their remote city. It was his last sight of them; and already the mystic knowledge that had been imparted to him was fading a little in his brain.

The telepathic vision of the citadels that imposed their severe architectural ordination on a mad terrain; the supernal, hard-won power of the Masters, battling perpetually against lawless elements and the treacherous, intractable forces of a cosmic Pandemonium—all had become slightly unreal, like a dreamland from which the dreamer is departing.

Now the blind aerial blur had enveloped the vessel Greyness, clinging and all-pervasive, filled it like an atmosphere of cotton-wool. Slight, sound—even feeling and thought—were lost as if in some hinterland of oblivion.

Out of the blur, as if from a formless, hueless dream of death between two lives, the plane and its occupants floated into the dark azure of the terrene stratosphere. Sight, consciousness, feeling, memory, returned in a sudden flood to Morris and Markley. Below them again, they saw in mottled relief the familiar reaches of Nevada, edged with white and saw-like mountains.

THE END

What Is Heat? What Is Mass?

● THOSE who are interested in the problems of the habitability of the planets and and of space navigation will appreciate several illustrated articles in the current issue of *Everyday Science and Mechanics*, dealing with the properties of matter. It will be news to most readers that melted lead is only twice as hot as ice water; and that the two temperatures are hardly distinguishable from absolute zero, on a thermometer scale reaching stellar temperatures. Other illustrations will show graphically how matter varies in its density, from hydrogen, the lightest substance we are familiar with, to osmium, which is the heaviest; and will consider the possibilities of the neutronic material of which some stars are supposed to be made.

The "radio eclipse" will be described, and other matters of late scientific news. In addition, many pages will be devoted to simple exemplifications of science in practice, in the special November "Experimenters Number" of

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(Illustration by Paul)

As they drew nearer to Paris they encountered barred-off bridges. Everywhere was an indescribable disorder—the signs of the popular fury

THE DEATH OF IRON

By S. S. HELD

Translated from the French by Fletcher Pratt

CHAPTER XVI

Selevine Dreams

● They found a place on a bench. Near them peasants, ensconced among their bags or wrapped in their blankets, were slumbering. Several hours went by. A sense of complete exhaustion overwhelmed the travelers.

An old man was explaining to a soldier that he was going to Belgium to look for work. His cow was dead and his scoundrel of a daughter had run away from him with all the money in the house. He had lost all his portable property except an empty quart-can, which he threw disdainfully onto the railroad track. The soldier pushed him away and he sat down and began to weep feebly.

WHAT HAS GONE BEFORE

In the steel foundry of Morain & Co. at Denain, France, there is noticed a progressive deterioration of iron and steel as though they have been attacked by some disease. This especially concerns Raymond Leclair and Pierre Selevine, a Russian, two of the Morain engineers. Both men are interested in Renee the wife of their employer.

Several accidents occur in the factory, and the workmen become uneasy and fearful. The engineers are unable to explain the continual weakening of metals and machines. Police search radical organizations for the possibility of sabotage; but find no answer. One of the factory girls, speaking to Leclair, accuses Selevine of being behind the strange disease, but she is not believed. But one day Leclair finds Selevine unconscious near one of the machines at a time when the engineer should not have been in the factory. One of the big cranes in the factory falls from its girders killing some of the men. The disease becomes recognized as "the death of iron" and seems to be spreading like a contagion. The steel manufacturers try to use the spreading trouble as an opportunity for a stock market coup.

Attempts are made by Morain to apply remedies to the sick metal, with only partial success. The disease is called Siderosis, and manifests itself by a luminescence of the metals, as though they were radioactive. It spreads throughout France, and everywhere workmen are killed by metal parts and by machines breaking down.

Morain is killed by a bursting boiler; and Leclair becomes the lover of his widow. France falls into a chaos of conflicting social groups and seems headed for revolution. Demagogues spring up everywhere to goad the jobless masses on to revolt. The military is called out and much street fighting occurs.

Leclair, managing the affairs of the widow, gets hold of a stock of proscribed metal; but is killed by communists while defending it. Then Selevine who had also joined the radical groups is wounded and comes to Mme. Morain for shelter. When he recovers, they start off together in a horse drawn carriage for Paris.

● Slowly, in this story, we have been watching the decay of a world. Man's civilization, built up painfully over many millennia, seems about to vanish in a puff of smoke. We must expect then that the minds and emotions of men will turn to queer thoughts and queer activities. When men and women are faced with certain death or have lost everything they no longer operate under the same restraints as when they expect a long life, or have possessions to guard.

In this installment we will see further how vital the "death of iron" can be in crushing a proud race to the earth.

Some children approached Mme. Morain. They did not dare to extend their hands, but held themselves in a tense readiness for anything she might give them, like little animals. When she tossed them a few sous, they fled, disputing among themselves.

Toward six o'clock a sanitary train going to Lille was announced. A little later the locomotive came smoking into the station. At once all the travelers precipitated themselves onto it. The guards did not even try to keep them back. The train was covered with them—on the roofs, along the runways and on the bumpers.

"Back, keep back!" called voices, unavailing.

The gendarmes finally succeeded in clearing the track in front of the train and it left.

Selevine inquired about an inn where they might be able to spend the night. Renee remained silent, walking with difficulty, her eyelashes falling onto her pale cheeks, infinitely tired.

The wind tossed the edge of her scarf. The night smelled wild, as though burned with the distant fires. Somewhere a sign-board, half loosened, swung creaking to and fro. In the sky the clouds flew rapidly past.

A sense of irreparable disaster enveloped the young woman. The weight of a sorrow she had not sensed before seemed to fall on her shoulders. In the space of an instant a sudden vertigo transformed the appearance of the whole world to that of a nightmare already experienced. Between her and the outer world a reminiscence seemed to have been interposed like an impalpable screen, and everything she saw was half-hidden and inconsistent. In the disorder of her thoughts an idea which she tried to avoid kept coming back, an unpleasant idea which her memory refused to clarify.

Confused memories rose from the depths of her consciousness to trouble her. In what past existence had she already seen these ravaged lands, this violent horizon behind the coal-piles, this unbreakable frontier of misery which was directly connected with a stifling sky? ▲

city of the dead—or a happy existence somehow turned in reverse. Oh, to free herself, to get away, to break these dolorous chains!

She staggered. Selevine gripped her by the arm and asked:

"You are tired, Renee?"

She responded without being aware of what she was saying:

"No, Raymond. Oh, pardon . . ." The reality strangled her while the other part of her mind still followed the trail of some unattainable vision. The narrow street surged before her open eyes. Nothing broke the silence. Selevine halted before an inn and allowed the remains of an iron door-knocker to fall against the door. The wood trembled slightly and an old woman, her face angry beneath her bonnet, came to open for them. They went into a room where there was an odor of dried apples. The old woman busied herself in the kitchen, threw a few sticks of wood into the fireplace, and finally appeared with a rustic supper, of which they could not eat a mouthful.

Selevine asked for hot tea and eau-de-vie. He did not ordinarily care for strong drinks, but this evening, thoroughly tired, he poured out several draughts that coursed through his veins to filt him with an agreeable warmth. Lighting his pipe, he hid himself in a cloud of smoke.

The candle made shadows dance along the walls and among the furniture; Selevine meditated in a confused manner on the fugitive pictures of the last days—his precipitate flight, the hordes of emigrants, the people attacked by the Blue Evil in its human manifestation, the prisoners, a mother tearlessly watching her sick child, little larval human beings begging for something to eat, with heads enormously out of proportion, their every appearance painful. He saw once more the villages abandoned in all the ugliness of their poverty, certain aspects of the crowd, certain faces glimpsed in moments of panic or hate, rendered alike by the common distress . . . and all the pictures effaced themselves and sank into the shadows out of which emerged one persistent vision.

On the ground, among the broken bottle-glass and hard stones, in a bloody mire, lay a young girl, almost a child, and her torn garments permitted one to see her delicate breasts and the nudity of her stomach. Her retracted lips showed the line of her teeth and her disordered hair, and her half-closed eyes gave her the appearanc of smiling. A finger of her hand, that which had borne a ring, no doubt, had been amputated, and a line marked her neck like a black collar.

The air was still heavy with the remains of carnage. One could imagine some ferocious satyr-play, implacable and joyous. But the strange thing was that that young girl had resembled Renee.

Selevine wondered what had happened to him. Of what curious neurosis had he become the victim. He felt barbarous instincts stir in the depths of his mind.

● He shivered, passed a hand across his forehead and sighed. With eyes that had become a trifle haggard he turned toward Renee.

"Some days ago I was working in a suburb of Valenciennes. Nearly all the houses were deserted. One of them attracted my attention, however. The door swung to and fro in the wind and higher up a window clung to a dirty rag of curtain by means of a piece of broken glass. I cannot explain the impression but it seemed to be the signal that some horrible crime had been committed. I went in and almost stumbled across the corpse of a little girl."

And obsessed by another drama, Renee said:

"It was your Red Guards who murdered Raymond. The poor man whose courage your friends could never pardon. Killed by some scoundrel."

"And I, I repeat to you that it is false. All social overturns bring some ignoble characters up from the depths. They are the dregs deposited by centuries of ignorance and misery, now slowly rising to the surface of society. The most noble enterprises are touched in this way."

But Renee continued with irritation:

"All that is nothing but the phrases of a doctrinaire. I only know one thing—if you and others like you did not provoke disorders, Raymond would still be alive. It's very little consolation to know that the murderers are not inscribed on the rolls of the communist party. Bandits, revolutionaries, pillagers are easily mixed up, and separating them out is too much of a job for me."

And she added:

"Poor Raymond! I never really appreciated the value of his friendship. He had a charming imagination and a sense of the realities, as well as a clear and brilliant mind. Before anyone else thought of it, he understood the magnitude of the peril of the Blue Evil and the necessity of abandoning the factory . . . if we had only followed his advice. Why didn't I listen to him when he predicted the violence of the people and begged me to leave? Ah, he knew what was behind those nice words of yours: 'justice and liberty'! He was no cloudy idealist. He knew your friends."

"Too well," said the Russian, in a stifled voice, "in some cases. . . . Laval, for example."

"What are you daring to insinuate?" demanded Renee. "It's shameful of you! What did your precious Laval mean to Raymond, I ask you? Was he interested in politics? Did he get mixed up with your struggles? No! He ignored you and despised you. And if he did denounce that scoundrel, he did nothing but his duty. I wouldn't have hesitated to do it myself. When I think that his murderers are still unpunished! Oh! I could take terrible reprisals. I want revenge."

"The communists deported, the unemployed without food or lodging, more than five thousand workers assassinated, isn't that enough for you? Do you know that in the section of which I was a member not one man escaped death?"

"Except you. My congratulations! There is nothing for you to do now but enjoy your well-earned rest and receive deputations. The world is indulgent toward anarchists who repent."

"Your sarcasms hurt me, Renee. No, none of us can ever take any repose or enjoy the most simple pleasures of life. We are excluded from the rights of humanity. As for me, my work is not yet finished. We were beaten, but it is nothing.

"We will begin all over with better chances of success. The proletariat of the world has its eyes fixed on France and awaits the results of our efforts. Already they are following our example in England and Germany. No sacrifice is ever really in vain. Here where it was born, the movement of liberation will grow and ultimately extend across the whole world."

"Then the lesson you got wasn't enough for you! And you are going to continue on the track of I don't know what dream, to make new dupes to prepare for new massacres. You haven't the slightest pity for the unhappy people you draw into these futile adventures. What do you expect? Look out. You won't have the chance to get away when things go wrong again as you did this time."

Selevine's face became flushed.

"This is an unexpected reproach. You saved my life. Don't make me regret it."

The young woman's anger did not cool.

"All the same you have a queer method of showing your appreciation for the hospitality of the country where you have found asylum and protection."

"I could answer you on that point in a good many ways. But what's the use? Wait, hear me—there are necessary murders, just as there are sick men who can be cured only by cutting away portions of their bodies. I am one of those people who place the good of humanity higher than that of any country. I have a heart big enough to love all men, and brave enough to wish for universal happiness, even if it means some sacrifice. Well, what does a little suffering matter if it's a condition of success? A few weeks ago you approved my views. What has changed you?"

"You ask? What kind of a man are you?"

She looked him full in the face.

"Selevine, I am going to put one question to you and I want an answer without any evasions. Are you sincere?"

"What?"

"Yes. Do you really believe you are working for the good of humanity in destroying the organization of society? Are you a revolutionist by conviction?—or by dilettantism?"

"But—"

"Answer me."

"Truly . . . I don't know."

"Oh!"

"I swear that I would be ready to sacrifice my life for my ideals. Hear me, Renee, when a man once finds his life work, he must follow his course blindly without futile returns to examine himself. Doubt—the evil of doubt, agonizes our best moments."

● He remained silent for a moment and then began again.

"I embroiled myself in the combat, and yet if you knew how far I really am from all . . ."

He trailed off, seeming to be absorbed in his thoughts, then lifted his head and looked at Renee with concentrated attention.

A certain sickly grace had lighted up her features; her skin showed the fine tracery of the veins at her temples, her neck seemed to bend beneath the weight of the necklace that encircled it.

This feebleness left him without anything to say. He kissed her suddenly on the forehead, the eyebrows, but she repulsed him gently. Her eyes filled with tears.

His conscience suddenly disappearing he strained her lissome body to him, overcame her feeble resistance, and their lips met in a kiss wet with tears, and the kiss stirred Selevine to the depths of his being. But he felt she was far from him, drawn in on herself, inert. Then with an effort of his whole will power he let her go and went out into the night that would cover his sadness, filled with emotions he had never before experienced.

. . . Hardly had he gone to bed when, in contradiction to his usual habit he fell asleep at once. His mind entered on the borders of an incoherent nightmare, then, as though he could change the course of things at will, he found himself walking along a solitary road. Walls across which roses were growing, attracted his attention. Sometimes an iron grill permitted one to see gardens and bars of light flecked the silent forms of trees which extended their branches out toward a distant sea. Mists filled a low valley, there were olive trees along the edge of a brook, and a chimney was smoking near a road which the winter sun had paved with pale gold. The countryside was familiar to him, but the dream threw its air of unreality across everything.

Although he recognized the place, he hesitated as to which road to take. At last he was traversing a little alley, then he emerged on a wider street paved with irregular stones, and finally arrived before a house. It was filled with the victims of certain undesirable diseases, whose agonies displeased the tenants of nearby hotels. They were therefore, relegated to this place and its silences among the masses of geraniums less red than the blood from their corroded lungs.

As it was Sunday, people were walking about the streets and Selevine recognized some of them; a woman in mourning, carrying a cat in her arms; an acidulous old man, a chesty youth, a too-nervous child, which moved its head constantly and wrung its hands from time to time. He walked slowly wondering about their illnesses, warming himself in the rays of the declining sun. And as before in the warm and paradoxical winters of this place, the country was bathed in a light which attracted neither insects nor birds, and was filled with an indescribable melancholy.

A little old man came into the park, carrying a fiddle. His white beard covered his chest. He stopped, lifted his head and passed his bow across the strings. For Selevine the squeaky notes had the savor of defunct years recalled only in moments of pleasant sadness, voluptuous tears and smiling regret.

The violinist was working hard, and the veins swelled in his temples. At the windows, behind the drawn curtains, appeared faces, like the faces of the drowned in clear waters. Attracted by the cry of the strings, the passers-by approached noiselessly. The old man leaned on his cane, the woman with the cat wept, the nervous child fixed its magnetic eyes on space.

Half-forgotten remembrances and old phantoms surged into his consciousness with the air of things which are not and could not have existed. There was the light in the house, loved ones who had died, his unhappy youth, his wasted life. Oh, my brothers, thought Selevine, contemplating their destiny and his own.

For, vibrating in unison under the mysterious resonances of the strings, their perceptions linked themselves with his and with each other, and he was suddenly aware of their troubles, the days they had spent each bearing its load of lost opportunities and pains without result; and their true faces appeared to him across their ephemeral physical masks: people too tired, overcome by life, afraid of death. He felt the irony of their existences and burdens so much like his own.

Nevertheless something about these people, now fixed in attitudes of abnormal and grotesque desolation, made him uneasy.

The shadows in the park lengthened but without extinguishing the burning colors of the geraniums. A dead leaf turned and fell. The waxen skin, the salient bones —what was it in the twilight gloom? Under the shadow of Time they stood angular and stiff, they dreamed of things obscure, devastating smiles on their painted wooden faces.

"It isn't possible," said Selevine to himself, perplexed, held back by fear from seeing what he was certain he would see, approaching one of the incredible mannequins till it fell to the ground at his touch and he fumbled in its breast and stomach to draw forth hands full of straw and cotton, as he laughed, laughed softly at having been taken in by appearances and believing that this could be true.

Waking with a jerk, Selevine recalled his dream. The dawn was rising. A swallow went by under the milky sky, crying its little cry.

He felt himself without the strength necessary for going through the familiar gestures, a stranger in a world of ghosts without convictions and without love.

And like an unhappy infant he burst into tears over his own unhappiness.

CHAPTER XVII

In Paris

● The next morning Selevine went out to get information about the probable arrival of a train. As a result of having held Renee in his arms for one instant, docile if not consenting, a certain fever, like a warming of the soul, remained with him. The boredom with which the universe inspired him was not dissipated, and his inner daemon still whispered sarcasms into his ears, but a certain hope exalted all the forces of his being. He walked rapidly, brandishing his cudgel. His nostrils dilated with the odor of day, the wind blew across the cracking ruins of the houses and bent the rustling young poplars in a manner somehow cheerful.

Emerging from the railroad station he ran into Lefevre, who seemed in a hurry and much annoyed. When Selevine had answered a couple of questions, he repeated for the second time, as though incredulous:

"Then Mme. Morain is with you?"

His eyes hardly concealed a heavy irony. Selevine was tempted to smash his fist into the sneering face.

"Mme. Morain is on her way to her aunt's home in Paris."

"It's a bit odd all the same."

"What?" demanded Selevine sharply.

"Our meeting here, this coincidence."

He had come on from Peruwelz in a four-seater car. But the motor which had functioned thus far through some miracle of the *Siderosis*, refused to carry him any further.

"What rotten luck" he complained, "to find oneself stranded right in the most devastated district of the country and no tools."

Selevine demanded imperiously that Lefevre take Mme. Morain and himself on to Paris. The ex-factory superintendent, though not at all willing to oblige the Russian, whom he had always detested, hesitated between this aversion and the fear of traveling the unsafe roads alone. He remarked about the bad state his motor was in, but finally yielded to the importunities of his interlocutor. With a bad grace, he took him to the end of the town where the car had been garaged in the barn of a little farm. Selevine examined the motor, found the cause of the trouble and fixed it after a fashion with the aid of what implements they could find.

At the Hotel des Negociants they found Mme. Morain already wrapped in her coat and ready to go. She made a gesture which Selevine had not time to interpret, for two gendarmes, rising suddenly out of the dark at the back of the room, demanded to see the papers of the travelers. Renee remained motionless, hardly daring to breathe, but Selevine, with a smile, exhibited papers that had been carefully forged, and the inquisitors excused themselves and left.

Lefevre seated himself at the table and terrorized the servant by the demands of an appetite sharpened by half a day of fasting.

"I'm going on to Nice," he explained. "The southern part of France has suffered little. You can get plenty to eat there when you're hungry, but you have to pay the price for it. But these cities here are full of emigrants without counting the foreigners who are around temporarily, taking advantage of the exchange to live on nothing. Me, I—"

He halted, perceiving that the inn-keeper had reentered the room and was listening to their conversation.

"That old witch is spying on us. Positively, she spoils my appetite gazing at me with those owl's eyes of hers. And her wine is the worst tasting vinegar that ever flowed into the glass of an honest man. *Hein!* Who ever would have said that we three would meet in such a dump after wandering all over the country like tramps. And we're lucky to get out as easily as we have. After poor old Leclair, someone told me that both the Gerard brothers have been killed. One disappeared after the fire at their place and the other one died of exposure and the Blue Evil."

He turned toward Renee.

"I tried hard to get Raymond to leave Denain as much as three months ago. I can still see him as he last showed up at my house, when he tried to get me to take on some queer business deal in which part of your holdings were involved. He was a bit upset and was willing to get rid of his mining properties at any price at all. I told him I would do what I could for him. He mentioned you, too, madame, and I would be very happy if my small knowledge of financial affairs could be of any use to you. You may dispose of me as you would of our late friend."

And as the young woman was thanking him he added:

"Friends were made to help one another in a pinch."

Speaking of Leclair, he referred to the arrest of Laval, and remarked that he attached no real importance to rumors.

"Leclair met Fanny at my house and they saw each other after that—just how frequently I don't know. She had seen her former lover, and the two men hated each other. It seems that Laval wanted to get hold of the stocks at Aulnoy, and Fanny intervened in favor of Leclair."

"Or against him."

"You know how it is with women—"

"Yes, I know," said Selevine in a cutting voice. "Fanny

was at your house for a while wasn't she? And she knew about the existence and whereabouts of the stocks of Duro-Fer."

"It's possible," said Lefevre, avoiding the Russian's glance, and pulling out his watch, he added:

"I think it's time we were starting."

All three climbed into the car and Lefevre took the wheel. When they got outside the city he speeded up. A road opened its flying lines before them. The fields on either side flowed past monotonously, patched here and there with groups of beech or apple trees. Sliding through the clouds, a ray of sunlight made the roofs of Douchy glow around the clock-tower. They found the streets empty, the houses abandoned and the only inn boarded up. The road was covered with a salt of cinders. Along the walls posters bordered in heavy black told of precautions to be taken against the human *Siderosis*. Foraging around, Lefevre discovered a few cans of petrol in the store-room of a little hardware shop.

● The auto went on.

Roofs rose out of the fog that was mounting from the earth. A fine perspiration seemed to be rising toward heaven. Selevine regarded the sombre concavity from which had come the piece of iron bearing the unknown poison which was striking down their land.

They passed through Arras. It was nine o'clock in the evening. As they drew nearer to Paris, they began to encounter barred-off bridges that forced them into a series of fantastic detours. A locomotive which had rolled down an embankment barred the road at one place. Fences torn down, paving torn up, broken glass in the middle of the streets, an indescribable disorder everywhere, bore mute witness to the popular fury during the preceding week.

From Mount Valerien, a searchlight lost in the shadows of falling day, threw its shaft of light across the fog above the city and lighted up the vapor like a halo.

Having dismissed her maid because she was unable to pay her any longer, Mme. Lafont attacked with energy the mean duties of housekeeping which her poverty failed to render any more attractive. A permanent anxiety had taken up a dwelling in her eyes. Her income from the government bonds had fallen with frightful rapidity, and by this thermometer she measured the progress of the disorder, since it had struck down that thing which she regarded as the most stable fact of existence.

After having long protected its weakling members, civilization was crushing them in its fall. Chance, which is king in all uncivilized countries, returned to the cities from which it had been banished, and proceeded to destroy all the toys which had kept some millions of human beings happy. Mme. Lafont was possessed of a certain natural serenity which had been reinforced by a long series of peaceful years. Now dangers, ruin and the malady assailed the house where she had expected to die quietly after a life consecrated to religious observances and labors in the kitchen and over her embroidery hoop.

She had to sell her jewels, lay in a stock of provisions, and stand in line before a bank to obtain some money whose value fell from hour to hour. A bill would lose twenty-five per cent of its value in a single day. And she was annoyed by the sight of scoundrels making huge profits while honest people's fortunes melted away between their fingers, drop by drop.

Mme. Lafont was extremely fond of her niece Renee. After the death of M. Morain, she had written that she would accomplish even the impossible to facilitate Renee's existence if the latter came to live with her. But every day events were more discouraging to her kind heart. Her little fortune gradually melted; her friends disappeared. This isolation in a great city made the situation particularly painful for her. She had a peculiarly expansive character and she suffered from having no one to confide in but Renee or Selevine. The latter's distracted air froze her justest and most plaintive complaints on her lips. The Russian who visited the house assiduously, was far from being a welcome visitor. Mme. Lafont was not in ignorance of his part in the communist troubles, and she considered him a compromising visitor; perhaps a man actually wanted by the police. Nevertheless, his respectful attentions to Renee, the services which he was forever performing for her, modified this resentment slightly.

Selevine had kept up cordial relations with Barrois, and had persuaded the latter to care for Mme. Morain's interests at Denain. As chief engineer of the Reconstruction Committee this help could be invaluable.

After a long period during which Barrois gave no sign of life he arrived at the dwelling of the two women one day. He had not forgotten his old friends, but he had his duties and they left him little leisure. He seemed uneasy, his face was drawn; quite different from what Renee had known of him. His job was the reorganization of means of communication and the provision of food-supplies in the devastated regions. With regard to what he was doing at that particular moment, he was vague. He had seen Ronceraies in ruins; it had been sacked and then burned. A few blackened fragments of wall alone remained and the lovely trees in the park had been cut down.

Mme. Lafont trotted out her usual list of complaints, but the engineer hardly heard her.

A single subject occupied all his thoughts—the malady of metal. His life had become a series of days of back-breaking toil and nights without sleep. Driven at frantic speed during the day, his nervous machine kept up its work at night, and when he tried to shut his eyes for a moment of repose, he could see nothing but the disordered cities, the ruined countryside, burned and rotting buildings. He knew what it was to work by lantern light, with his revolver on the table beside him while the streets echoed with cries of hunger and wrath; he had gone down into mine pits by uncertain ladders, had felt the arches of bridges vibrating beneath his tread above water that boiled through the weakened piers.

● "We have organized a trucking service," he recounted, "for the whole northern basin and the Department du Pas de Calais, right down to the Belgian border. That is, from the head of the railroads where there are a few locomotives still moving on Duro-Fer rails. From Luxembourg on, all the locomotives are under lead armor.

"Every day we make new maps of the danger zone, and the disease spreads wider with our markings of Chinese ink. Fate is laughing at human genius, breaking up the most certain combinations and delivering blows with a capricious precision of which the Unknown alone is capable. In mathematics one error in an equation

changes the result, but two sometimes cancel each other, and that's the way it is with the Blue Evil. We cannot count on a single thing, not even on catastrophe.

"In the whole region from Anzin to Creusot there is a provision shortage in spite of all we can do. One train at Roubaix was literally submerged by famished bands and we finally had to drive them off with jets of steam. Thousands of abandoned children are wandering about in the fields. The hospitals are swamped and they no longer make any effort to count the dead. Organisms enfeebled by hunger are peculiarly subject to the human *Siderosis*."

Mme. Lafont looked up.

"Isn't there any remedy?"

"None. Preventive measures are the only things that are any use."

"I was going to ask your advice. It's about Renée."

Barrois, surprised, looked at the young woman. In her mourning clothes, her face had an impressive pallor and an almost imperceptible line had drawn down the corners of her mouth. He observed on her wrist, at the end of her sleeve, a little purple mark, and recalled a working woman he had seen one day with a similar mark at the Neuville dispensary. It had been necessary to amputate the hand.

"Monsieur Barrois," said the old woman, whose preoccupations were with her own round of practical affairs, "you are in connection with Graham and the big men of the Reconstruction. You ought to be able to find some buyer for the Madeleine mine."

Barrois felt an interior shiver. He knew that the mine was hopelessly lost, but Mme. Lafont's air was so supplicating that he promised to aid in the impossible project of its sale.

As a matter of fact, it was less than a week later that he returned with a friend, a rather puffy fat man named Colson, a meat packer who had realized an amazing fortune by selling slightly damaged stores of beef. This important personage had the air of distinction and frankness which distinguished most of his class. Renée's aristocratic mien interested him from their first meeting, and while he was busily scraping his nails with his pen-knife he cast speculative glances at her, estimating her cash value. He liked her; was disposed to set a most generous figure for her, in view of the decline in feminine values in comparison with those of edible meat, and ended by offering his protection in exchange for certain small favors. But they were refused him, and a project in which sentiment and interest could have been combined in the proportions recognized by the usages of polite society perished. With it went the last hopes of Mme. Lafont.

That lady held Selevine responsible for the check, although it is difficult to see where he was to blame. The attitude of Renée seemed to justify that of her aunt. She avoided seeing the Russian alone, exhibited a bored air when he called, and discouraged his every attempt at conversation by her silences. Sometimes, without any apparent reason for it, the Russian saw tears in her eyes. His visits became less frequent.

He had changed, too. His gestures were less lively. He trod the streets with bowed shoulders and uncertain steps and when he lifted his face his appearance surprised those who had known him.

With indifference, he had contemplated the spectacle of the Socialists, at first beaten, coming into power and persecuting their enemies in turn. Men he had venerated broke their most solemn promises, forgot all friendship and honor and went through the old familiar gestures of those they had been crying out against. Among all parties self-interest, envy and cowardice appeared without a single redeeming virtue.

But Selevine had lost his faculty of being indignant over such things. A profound lassitude had submerged his qualities of hate and love. The generous ideals for which he had been willing to sacrifice his life in that past so full of hopes and struggles, had now become a melancholy vision without warmth. His only comfort was that he felt able to see the truth without any haze of illusion, and his misanthrophy had acquired an almost metaphysical character.

"What?" he used to ask himself, "Is it possible that I was able to believe that human beings could attain what they never have possessed—happiness, wisdom, love of one's neighbor? As though the human will could overcome the laws of existence, could submerge the primitive instincts that slumber in man's being, ready to awake under any shock, as they are awakening and coming forth today like well-nourished beasts."

One of his friends, the painter Keller, hoping that diversions would draw him from this moodiness, had introduced him into a cosmopolitan artistic circle. The correct Bohemians of this group, always washed and shaved, made desperate efforts to bring originality into their lives, but their dilettantism had a character that was hardly innocent. They had a definite bent toward the more morose forms of vice.

Morphine and cocaine were freely used to overcome the pains caused by the radioactive metals and the use of these drugs had spread with great rapidity. Not merely the idle classes, but much of the youth of the working classes had abandoned themselves to the narcotics, and generally ended their futile lives with suicides prepared with elaborate care.

Overcome by his incurable boredom, his will-power defunct, Selevine had been unable to resist the example. Already the influence of the drugs was showing in him. He became irritable without reason, slept little. He, who had always preferred solitude, was now pleased only by the company of vulgar crowds, seeking out by preference the company of those who made up the night-life of the dying city—bored men and public women.

CHAPTER XVIII

A World Without Iron

The murmur of the crowd did not reach the ears of Mme. Morain, who had become a hermit in her own room, stretched out on a chaise-longue in the position which gave the least pain to her unhappy body. In the last two months there had been a rapid advance in the illness which was striking her down.

As a general thing the radiation emanating from the radioactive irons produced surface lesions which were easily curable, but an anlysis of the blood would show an alteration of the corpuscles resembling that observed in cases of pernicious anemia.

The strength of the young woman had declined, a feeling of cold that kept her huddled before a fire grew upon her daily, and her sleep was troubled with nightmares.

In this overpopulated, undernourished city, now suffering from an influenza epidemic as well, the most ordinary medicine had begun to be scarce. Mme. Lafont sacrificed the last of her resources and called in the best doctors she could find. They gave the sick woman one of those preparations of colloidal iron, a rust-colored drug which in a manner still ill-explained produced a notable improvement after a short period of fever. The somnolence and pain of the patient became less marked.

Several weeks passed without any change in her condition. With the return of her strength Renée once more had energy enough to be worried about the cares of existence. She had come to think of Selevine without resentment and had even begun to excuse his conduct to herself. She was genuinely glad to see him again, although she did not let it appear on the surface of their conversation. He expressed delight in her reestablished health. The ardor of some secret idea shone across his words. His brilliant eyes were fixed on the young woman's face with a persistence almost painful, as though he did not quite dare say what he had on his mind. She maintained toward him a reserve which did not permit the conversation to get beyond the most banal generalities.

Thus the conversation lacked point; the Russian hardly dared broach the subject he had at heart. She told him about the emigrants she had seen passing in the street, bound for the New Atlantis. They were singing and in their hand carts they carried all their belongings and their children. Renée had envied these women, who would certainly experience some miseries, but would also live a free life and in an atmosphere of love. Selevine realized she was thinking of Leclair.

"I wish I could get away, too," she said, "far away from these sad spectacles to a country where civilization is not yet spoiled. Alas, it is impossible!"

She became absorbed in some reflection.

"I often ask myself what the future can hold for two single women like us, with unpaid bills piling up."

"What about me? Don't you count me as your friend?"

"What can you do, my poor Selevine?"

"Quite a bit if you will merely accept my presence." He hesitated a moment, embarrassed. "Give me only a little of your confidence . . . I have ideas. I want to get you out of your troubles."

The young woman did not answer, but her contemptuous look halted on his blemished face and then ran down to the hands which clumsily stopped their movements.

He was conscious of a sudden access of despair.

"Renée, give me a chance. Don't abandon me."

"You have abandoned yourself."

"If I could somehow explain—"

"I am not asking for your secrets."

These dry replies put him out of countenance.

"Better give it up than try to deceive myself," he said, in a muffled voice. "But inaction I have—After all, I'm only hurting myself." Other words mounted to his lips, but he did nothing but babble. He was relieved by the sudden entry of Mme. Lafont and he bade that old lady good-bye so brusquely that she was left with mouth wide open. But Renée retained him for an instant and with unexpected cordiality, begged him to come again.

In the street he recalled the pretty smile which had illumined her face.

Excessive in everything, incapable of mastering his passions, Selevine had reached the point where considerable dosages of drugs were necessary. His eyes became haggard, his cheeks fell in, a dry cough tore at his throat. He felt himself slipping toward an end he preferred not to contemplate, but was incapable of any effort of resistance.

It was April and a precocious spring had surprised the people of Paris. In a few days the trees of the avenues were covered with flowers, and the sky, washed by rains, extended above the city in a blue vault against which floated a silvery fleece. Odorous breezes, warm sunlight, came to caress foreheads lined with care and eyes burning with fever.

And Selevine thought:

"Nature seems to say to her spoiled and unhappy child, 'Why this despair and agitation? Some of your toys have been broken, but you still have all the truly good things, the forests, the light, the tinkling water, all the magnificent and diverse gifts of the holy earth.'"

● But men were deaf to this eloquent voice. They ran through the streets, overwhelmed with sorrows and regrets. They gathered the last of their strength to tear at each other, still submissive to the magic of signs which had long since lost all meaning.

The quarter where the engineer lived was generally peaceful. In the past it had been an aristocratic residential neighborhood, but now almost entirely deserted, it showed closed doors along the borders of its parks and beneath the spring branches. Luxurious limousines no longer coursed along its avenues, but one occasionally heard the marching feet of a regiment of blacks and the beat of their drum. Groups of mounted police sometimes went by on bronze-shod horses, driving before them crowds of tramps.

Selevine walked through the garden-bordered streets and promenaded in the parks where whole groves of trees had been cut down. Among the stumps rose masses of rocks and the ugly forms of the concentration camps for contagious diseases. As the Blue Evil gained the mastery, the steady noise that was the breathing of the great city seemed to become thin and irregular. Only the occasional crack of a gun, answered by the barking of dogs served to break the silence.

There was a vast collection of beggars at Billancourt. Huts and tents made up of the materials resulting from the demolition of all kinds of buildings lent an unusual appearance to this portion of the borders of the Seine. Hulks, breaking from their moorings, came down to go aground on the banks and the women used them to hang out their washing. A nauseating odor rose over the place from drift-wood fires.

Rats quarreled with each other among the ruins and half-savage cats wandered everywhere. All efforts to drive out the homeless people of this settlement had been fruitless and the contrast between their openly-exhibited misery and humble occupations and the luxury of the nearby city would have surprised a disinterested observer. Most of them went barefooted, clothed in rags and patches, though a few had made themselves crude wooden sandals. Their faces were resigned, sometimes imprinted with a kind of dumb satisfaction at the prospect of an existence without effort.

In certain parts of the city the storekeepers had branched out in new directions. The rarity of money obliged them to adopt the primitive mode of direct barter as a medium of exchange. Utensils in neo-fibrite, porcelain stoves, cooking vessels of refractory materials were much prized. A package of steel needles, guaranteed immune to the *Siderosis*, was an object beyond price. One day Selevine saw an illustrative occurrence near where he lived. An old woman who had traded a pair of curtains for one single precious needle, was weepingly exhibiting the little piece of steel, broken in two. How would she be able to make her living now? The store-keeper, a Levantine of sorts, shrugged his shoulders.

"Pfut! I guaranteed against the *Siderosis*, but not against accidents."

Someone who was examining a tray of mineral objects, looked up and came over. It was a man named Wronsky, bareheaded, wearing a belt of wooden plaques and a stone bracelet according to the prevailing fashion.

"Selevine! I'm glad to see you. Hein! What do you think of this for a sign of our times? That poor woman doesn't know that she can buy glass needles that are practically unbreakable. They make them at Dresden according to a secret process.

"Admire this little toy I just picked up, will you? It's a blade of green obsidian, sharp as a razor, with a horn handle. Norwegian product. With it I could cut your throat or stab you to the heart as neat as you please. Our ancestors, the lake-dwellers, couldn't have made a better one. It is one of the benefits of the *Siderosis* that it is making us substitute the infinitely varied grains and warm colorings of stone for the uniformly polished surfaces of the metals.

"No more quantity-made parts. Every object handled by human hands will have its own individuality. The careful craftsman will replace the repetitious machine that the modern workman has become. We're returning to primitive sources, even to the prehistoric age, when the first impressionists carved the likeness of the aurochs on a flat bone. Centuries since then—and what have we accomplished? Nothing but mass production. This age of ours is the beginning of an artistic renovation.

"Most of the conceptions are still clumsy and paralyzed by centuries of custom, but some are rich with the promise of the future. If you will come over to my rooms, I'll show you a collection of daggers, scrapers and punches in flint and fossil ivory. I also have some horn bracelets and stones that have been engraved in the sober and noble style that marks the true artist. I adore such things. In a more practical direction there has been appreciable progress also. I have a whole series of utensils in neo-fibrite and vitrified asbestos that are something for their manufacturers to be proud of. My mistress, who can cook like an angel, is delighted with them. But one thing is lacking, and it's annoying."

He passed his hand across his face.

"Bah! We have to wear beards. It's the fashion, but—"

● Selevine could not keep from smiling.

"You think I'm absurd. I attach a certain importance to such little details. When I imagine the life of a citizen of Athens of the Periclean age, for example, the important thing for me is the intimate detail of his existence—his method of dressing, bathing, his games and how he looked in a public market place. These images appeal to my imagination more than all the great events related by the historians. The contemporaries of a change in the conditions of existence cannot predict the future. Their vision of the immediate present is deformed.

"But just the same I find this little business of the broken needle has its importance. The importance is this that it is not here where they are selling the old things that we will find interesting observations, but out at Vanves where there is a permanent fair for the new type of products. You will find all the 'ersatz' of iron there, specimens of all the non-metallic arts and crafts. I'll introduce you to Silber, the physiological mechanic. He ought to be in now."

Taking Selevine by the arm, he led him toward the river. The bridge at Issy was not entirely destroyed but it was unsafe and they had to take a raft-like ferry. The heavy waters were churning together a thousand pieces of debris torn from the houses along the bank. A ferryman guided the raft by a line of cords stretched across the stream, another pushed away floating masses of wood with his pikepole. Numberless tiny clouds were floating in the sky.

Submitting to the influence of his melancholy, Selevine permitted his glance to follow down the muddy line of the river till it joined the horizon. The scene had the cold inhuman light of the countries of snow. He had difficulty in recognizing Moulineaux. The trees had been cut down, the houses that threatened to fall had been demolished and he could see as far as Meudon, where the fogs were already gathering. A crowd of sellers, buyers and wanderers was pressing along the esplanade.

He was deafened by the barking as he approached. One whole side of the market was occupied by kennels. The insecurity of the individual in the face of the growing number of marauders, the breakdown of all means of defense, had caused an energetic search for breeds of dogs capable of being trained for defense. Among some families dog-meat also appeared on the bill of fare, and little dog-carts had become a favorite method of transportation. The most favored breeds came from Belgium. Young men, bearded and with long hair and young women clothed strangely but elegantly in berets, leather blouses held together by laces and seamless moccasins, went by in pairs, cudgel in hand and holding semi-savage hounds in leash. Others were drawn by Great Danes harnessed to little carts.

Rickshaws drawn by runners in the Japanese style were still rare enough to attract attention.

The crowd was most dense on the north side. There were exhibited all the products which were replacing metal—most of them imported from Germany. Pressed paper, fibrite, fibro-cement, hard woods, which had been impregnated or petrified by various processes, silicates, lacquers, asbestos, all varieties of glass, various alloys immune to attack, metallic dusts which had been combined under pressure and finally the latest invention of all—the Agglomerates, which were colloids of iron and stone produced in an atmosphere of argon and treated with waves of infra-sound.

In the hall devoted to tools one could find files in calorized glass, resistant to any amount of filing, but falling into fine powder if their points were broken, knives in jade, hatchets formed of hard lava, diaphonous min-

erals, irised crystals and fashionable slave collars.

Workmen specializing in stone were already numerous. There were primary workers who detached the nuclei from the rocks, breakers who split off pieces with cutting edges with a single well-placed blow, grinders, cutters who used bows and water in the manner pictured in Egyptian tombs, chiselers, engravers, and workmen who had already become expert at sharpening hooks and piercing the eye-holes of needles in stone or horn.

Seated on the ground an old man patiently polished a piece of flint. All these stone objects were much favored, not because of any necessity, for the stocks of metals were still far from being exhausted, but because everybody wanted something new and novel. It was the fashion for women to sell their gold mounted jewels in exchange for those fashioned "a la sauvage."

Selevine looked over these things with a distracted air, but it was the exhibit in a shoe window which really drew his attention. Here a group of inventors, anticipating the disappearance of metal, had banded together to exhibit models of various necessary appliances; sextants and astrolabes intended to replace compasses, sundials, aideromsters for searching out the invisible traces of the malady in masses of steel.

(To be Concluded)

The Lake of Life

(Concluded from page 513)

in the stream near the rock ledge.

In spite of the self-control that Laughlin had been rigidly enforcing on his whirling brain, an unholy horror began to freeze his conscious thought channels, as he stood in full view of the grisly inmates of the clear stalagmites. Everything seemed to be progressing so inevitably toward their own ghastly incarceration. Chemicals were being mixed. A place on the ledge beside the other stalagmites was already prepared. Even the—

Suddenly in a hullabaloo of fighting and kicking and shouting poor Murrumbidgee was jostled down to the water's edge, and swiftly lashed to the pine logs. A shouted order from Hafa rang out in the cave, and willing hands shoved the luckless black out into the black stream where the current swirled him around once or twice in an eddy before taking him for his last journey into the Unknown. Not a whimper broke from his lips, but the stark agony in his wide, staring eyes, contrasting whitely in the gloom, was an unnerving thing to see.

Horrified, Laughlin fought vainly in the grip of several plant-men to rush to the water's edge. For a half minute the aborigine was in sight, and then his twisting black-shocked head was gone. Why he was not kept for the stalagmites Laughlin did not know, though perhaps his color deprived him of the "honor" of guarding the Portals.

Forcibly, the engineer was taken to the site of his particular stalagmite. Already a clear, crystal-like base had been set, upon which he was placed. A thin circle of the plant-men stood around him, beginning to quiver and tremble in their unearthly manner. Several of them stood on a platform to drip their hellish concoction on his head. But before the ritual was started, Laughlin stiffened like a rod. A faint buzzing drifted into the cave, a buzzing that grew into a drone in an instant.

"Webby!" bellowed the vastly relieved Laughlin.

He suddenly broke loose from those holding him, and took a swift poke at the first one to make a grab for him. New life and energy apparently flowed into him again. It seemed nothing could stop him. Like a mad bull he had charged his way to the entrance before the plant-men recovered from their surprise.

And then they saw the big, roaring red thing descending from the skies. In stupified astonishment they gazed upward at it, a great paralyzing terror beginning to seize them, for surely this whirling monster of the air was in league with the white men, else why should he be so crazy happy? And then the greatest shock of all came when the red thing came straight down lightly on its whirling wings near the beach. Those nearest turned in ungodly fright, screaming one word:

"Webster!"

Someone had recognized the white man riding the blustery, noisy bird. Webster! . . . . and he had only disappeared down that stream a moment ago as a black man! Now he was a white man again back from the Unknown. Certainly, none of them ever returned from a journey down that stream of Life. These men *were* white gods! One wild look they gave, abandoning all thoughts of Laughlin now approaching the monster. They fled precipitately into the depth of the cave, hoping against hope that the red monster would not come a-seeking them in lusting revenge.

Laughlin climbed into the forward cockpit.

"Where's Bidgee?" yelled Webster above the deep-throated roar of the motor.

"Done for," returned Laughlin with a sad, reminiscent smile at the way the black had so bravely gone to his death, "they sent him down the outlet."

Viciously, Webster jockeyed the motor, sending out a hateful blast that echoed deafeningly in the cave. Then, dejectedly, he sent the autogiro up in a steep climbing angle, heading for the village and the fuel of the ill-fated expedition.

Some time later when all had quieted down strangely, a few of the bolder plant-men dared venture forth, only to scamper into the bush pell-mell when the monster red bird rose, with a great stew and drone, from the direction of their village as if having feasted itself. And when it passed far overhead, they stood stock still, gazing upward in vague fear. For through their unholy pulsating counterfeit for a brain was weaving a strange uncertainty as to the future. The white gods were returning to their magnificent realm in the skies on their thunder bird, but who could tell when they would again return to avenge themselves?

THE END

The Asteroid of Gold

(Concluded from Page 519)

wide open somewhere out in space . . . . but not like this. Doesn't matter after all . . . . . "

"Why should it?" demanded Vernon.

They sat silently, watching the Twin climb rapidly toward the zenith. Dust spurted in the mine pits as a few tiny meteors plunged down on the asteroid.

"If one of those hit us, it would be over in a minute," observed Vernon.

"Look!" screamed Vince. "The Twin is falling!"

Vernon jerked his head upward.

The Twin was falling! Falling with a rotary motion around the axis of its length. Even as he watched it seemed to draw closer!

"A meteor," exclaimed Vince, his voice tense, "a large meteor. Struck it and threw it out of its orbit! That's the only thing that can account for it."

"It is bringing the *Space Pup* back to us!" said his brother.

"It will crush the *Space Pup*," declared Vince. "Likely smash us, too. It will land smack on top of us."

"It won't hurt the *Space Pup*," argued Vernon. See, it is rotating. The top will be turned toward us when it strikes. The ship will be on top. It will be safe!"

"By God, you're right," yelled Vince. "Here kid, we're getting out of here! Grab a handful of rocks and jump as you've never jumped before! At an angle to carry you out over the edge."

He stooped and scooped up handfuls of rubble.

"Get going!" he screamed at his brother.

Vernon was running. Running with long leaps toward the nearer edge of the planetoid, gaining speed at every leap. Then he shot upward, as if he had been catapulted from a gigantic sling shot. Up and up he went, out and out, until he was a speck against the blackness.

Bouncing along over the surface, Vince put all of his strength into a tremendous leap as he struck the rock beneath with both feet planted firmly. He seemed to be rushing out, away from the asteroid, at an express train speed. Rapidly the bloated space suit encasing his brother seemed to leap to meet him. Then he was floating free in space, looking back at the Twin rushing downward upon the slab of rock he had so recently quitted. He could see that the rotary motion of the Twin, probably imparted to it when a meteor had struck with force enough, not only to knock it out of its orbit, but to also reverse its directional spin, had brought the *Space Pup* to the upper side. The two planetoids were so close now that the ship could not possibly be crushed between them. They were due to crash any moment now and the *Space Pup* was on top!

He clawed with his hands at empty space, swinging his body around until his back was toward the asteroid. Then with all his strength he heaved a rock straight away from him. With a rush his body moved backwards, slowed down, glided. Another thrown rock and another leap . . . another . . . another. Over his shoulder he could see out of the tail of his eye that he was proceeding in the right direction.

A short distance away he could see Vernon also heaving rocks.

Another rock . . . . but this time his body did not slow to a glide. It kept on moving. He realized that he was falling, that he was influenced by gravity!

Sudden fear assailed him. Had he miscalculated? Had he been captured again by the first asteroid before the Twin had struck? Or had the Twin already struck?

Desperately he attempted to twist about. He succeeded and glimpsed jagged rock surface beneath him. The matter of landing without ripping his suit or cracking his helmet ports took all of his attention during the next few seconds.

He struck on his two feet, tumbled and rolled, his arms shielding his helmet. The ground seemed to be pitching and rocking. He could feel it quivering and moving beneath him. Like an earthquake. He gained his feet, but lost his balance again.

As he fell he caught sight of a familiar silvery shape looming large before him, swaying and rocking as the surface of the asteroid swayed and rocked. He was on the Twin, which must have already struck the first asteroid . . . . and the *Space Pup* was only a few rods away!

He spread his body flat on the surface to keep from being tossed about as the two slabs of rock, suddenly thrown together with terrific force, danced a jig in space.

Where was Vernon? Had he landed? Or was he miles behind? As soon as the Twin struck, the first asteroid also must have been knocked out of its orbit. Both must now be rushing through space. If Vernon had not been close enough to be captured by the gravity of the two, he would now be somewhere out there in the darkness alone, and perhaps helpless.

A wave of illness swept over Vince at that thought. Would he be able to find him in time? Or would he only pick up a corpse, a man floating in space, dead from lack or air?

He raised his head to stare at the *Space Pup* and a cry of gladness welled up into his throat. A man was crawling toward him over the weaving surface. Vernon! His brother . . . . safe!

Words beat in upon him.

"Vince, are you all right? Vince! Vince, you're all right, aren't you?"

"Sure, I'm all right, kid."

The two crawled together and locked arms.

"We took an awful chance, kid," said Vince.

"It was the only thing to do," replied Vernon. "We couldn't stay and be smashed in the collision."

Arm in arm, they crawled over the buckling, gyrating world toward the *Space Pup*.

THE END.

Science Questions and Answers

This department is conducted for the benefit of readers who have pertinent queries on modern scientific facts. As space is limited we cannot undertake to answer more than three questions for each letter. The flood of correspondence received makes it impractical also, to print answers as soon as we receive questions. However, questions of general interest will receive careful attention.

Atomic Energy

Editor Science Questions and Answers:

Many scientists speak loosely about the energy in the atom, and use large figures to show how much energy could be released from the atom. But usually they don't explain how they arrive at their figures, or how this energy might be released. Could you explain?

Thomas W. Fiedler,
Baltimore, Md.

(Different scientists use different methods to explain the meaning of the "energy in the atom," and they have various conceptions as to how it might be released. We believe that few men expect that energy will be released in simply destroying the atom altogether. Instead they rely on the peculiarities of atomic structure to get such "drippings of energy" as accompany the change of one element into another.

For example, when hydrogen atoms are transmuted into helium energy is released. This process is a "building up," for four hydrogen atoms are necessary to make one helium atom. Now the process of building up elements takes place, it is believed, in suns like our own, and from this process the sun's endless stream of energy is maintained.

For example, the atomic weight of hydrogen is 1.008. Four hydrogen atoms would weigh 4.032. But one helium atom has an atomic weight of only 4.000. The difference .032 (let us say .032 pounds in 4 pounds) is released as energy. In other words in every 4.032 pounds of hydrogen that is built up into helium .032 pounds is released as pure energy (similar to the energy radiations of radium).

Now in order to figure how much energy this might amount to, we can figure how much intrinsic or internal energy the atom has. The electrons circle their protons at a speed let us say of 15,000 miles a second. The electrons therefore have kinetic energy. When 0.032 pounds of matter are converted into energy, this kinetic energy becomes free energy. Now the formula for kinetic energy possessed by a body is

Energy (in foot pounds) $= \frac{1}{2}\ mv^2$

where m is the mass of the body in pounds and v is its velocity in feet per second.

If we have a pound mass turned into pure energy therefore the release of energy would be

foot pounds $= \frac{1}{2} \times 1 \times (15{,}000 \times 5280)^2$

this amounts to 97,370,000,000,000 foot pounds.

Now for every pound of hydrogen built up into helium .008 pounds are released as energy. Multiplying 97,370,000,000,000 x .008 we get 778,960 000,000 foot pounds.

In other words for every pound of hydrogen built up into helium the above energy release is obtained.

This method of calculation is only one of many. But it is evident, when we note that the energy released in burning a pound of coal is only 1,400,000 foot pounds, that in any case the atomic energy release is terrific.—*Editor.)*

On "The Origin of Species."

Editor Science Questions and Answers:

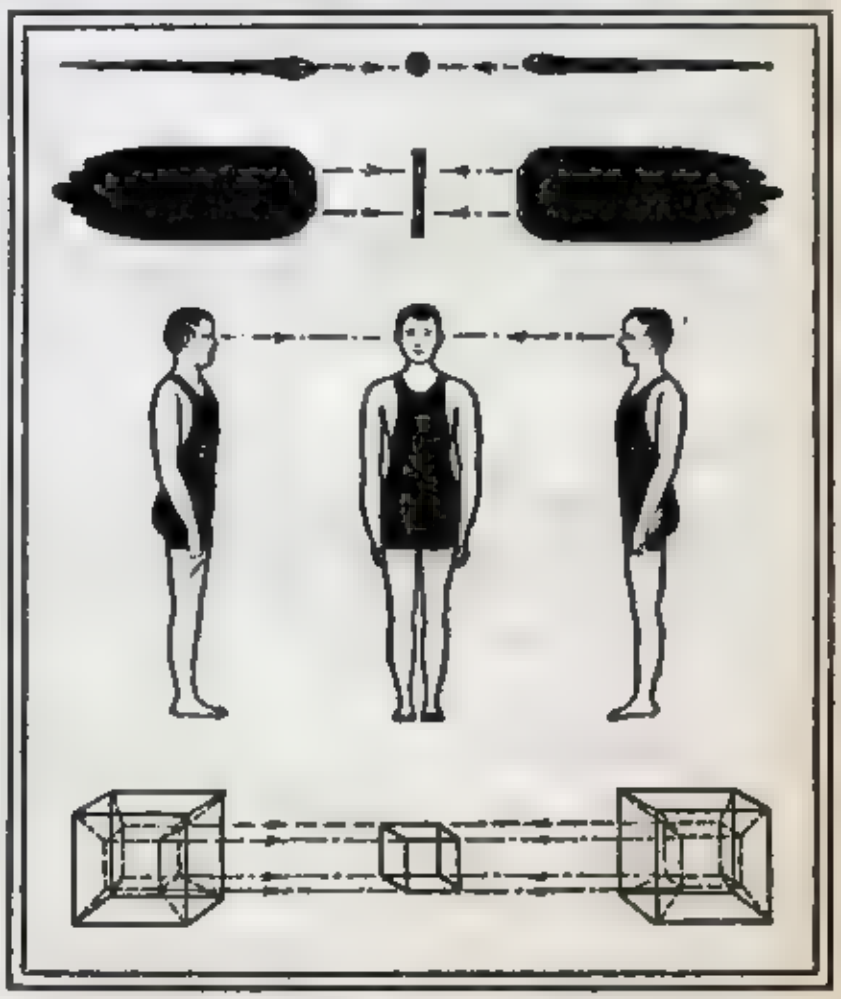
I have been having an argument with a friend of mine on the real discoverer of the theory of evolution. He says that Darwin was the first man to really put forward the origin of species idea; and it is my claim that another man preceded him. Will you tell us who is right?

Benjamin Daly,
Boston, Mass.

(There is a great deal of difference between the theory of evolution and the origin of species. For several thousand years preceding the publication of Darwin's "Origin of Species" men had been speculating about evolution, and why the animal and vegetable kingdoms presented such diversity of types. So "theories of evolution" were not new in Darwin's day. But Darwin did what other men had neglected. He gathered enough material together—enough actual proofs—to demonstrate his own theory of evolution, which he called, "On the Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life."

Now the conflict that our correspondent refers to might be the coincidence in the publication of the theories of Darwin and Alfred Russel Wallace. While Darwin was getting his book ready for publication he received a manuscript from Wallace entitled, "The Tendency of Varieties to depart indefinitely from the Original Type." The reasoning and conclusions of Wallace were so similar to his own that Darwin immediately presented both papers before the Linnean Society on July 1, 1858. A year later Darwin's book, "The Origin of Species" appeared.

Now there are some men who give Wallace credit for arriving at the natural selection theory of evolution first. However, we believe that both men have contributed so much that there is credit enough for all.—*Editor.)*



Illustrating four dimensions of space. At the top our two extremely long and thin worms, which are one-dimensional creatures see each other as points in space. The two flat, paper-like creatures underneath see each other as lines. The creatures themselves are two-dimensional. The three-dimensional men see each other as plane surfaces or in two dimensions. Finally we show a representation of a possible four-dimensional object. This is called a tesseract, and is formed by an extension into four-dimensional space of a cube. In other words the cube is only the projection of the tesseract, just as a plane surface is a projection of a cube. Naturally it is impossible to represent such a fourth dimensional object.

Hyper-Space

Editor Science Questions and Answers:

In many stories authors have mentioned the various kinds of space, with reference to the fourth dimension. I cannot seem to understand what they are driving at. Could you explain in your excellent "Questions and Answers" department?

Wallace C. Jacoby,
Cleveland, Ohio.

(There exists a great deal of confusion about the "so-called" fourth dimension. The most noted authority, from whom Einstein himself gathered much information, was the Russian mathematician Minkowski, who postulated a fourth dimension of time to be added to the three spatial dimension—length, breadth, thickness.

But many people seizing on the term "fourth dimension" have used it to mean another space dimension. As such that fourth dimension cannot be pictured by our limited brains, it can only be understood by analogy. In the accompanying illustrations the analogies will be carried out.

Let us assume a creature, a very long and extremely thin worm. He is so thin that it takes a powerful microscope to detect any thickness. Such a creature with eyes, at the end of his body when looking at a fellow creature, eye to eye, would see his fellow only as a point in space. Now our creature is a one-dimensional affair he had only *length* and he sees his world as a series of points.

Now let us imagine a world of creatures shaped like extremely thin sheets of paper. When two such creatures meet, they would see each other as lines, and they would imagine the whole world as one-dimensional. They themselves, however, possessing both length and breadth are two-dimensional creatures.

Now take an ordinary human being; he is a three dimensional being, but normally he sees things in two dimensions. The fact that things appear to have three dimensions to us, is only by virtue of the stereoscope effect of our two eyes—in other words it is an artificial effect. When we look at a surface we see normally that surface in two dimensions. Now since a one-dimensional creature sees only points; a two-dimensional sees only lines; a three-dimensional

(Continued on page 544)

READERS

If you like "Science Questions and Answers" in this magazine, you will find in our sister magazine, EVERYDAY SCIENCE AND MECHANICS, a similar department, greatly expanded called "The Oracle." Look for it, you science fans!

IN THIS department we shall publish every month your opinions. After all, this is your magazine and it is edited for you. If we fall down on the stories, or if the editorial board slips up occasionally, it is up to you to voice your opinion. It makes no difference whether your letter is complimentary, critical, or whether it contains a good old-fashioned brick bat. All are equally welcome. All of your letters, as much as space will allow, will be published here for the benefit of all. Due to the large influx of mail, no communications to this department are answered individually unless 10c in stamps to cover time and postage is remitted.

The Modern Atom, My Dear Editors

Editor, WONDER STORIES:

The first part of this letter being in the nature of a query, I hope you will take the trouble to answer it. If I remember correctly, in stating the rules and explaining what the contest in the *July* issue was all about, you said that there was a scientific idea behind the cover. In the English language the word "a" indicates one thing, not several. Yet, in the list of prize winning letters there are at least six distinctly different ideas as to what the cover represents. In other words, Paul splashed a lot of spheres over the cover in the hope that the contestants would find some scientific idea underlying them. Much to your relief, six different ideas were found to be represented on the cover.

It must be admitted that the cash prize winners deserved what they received for their explanations were ingenious. But some of the others . . . . . Ye Gods! Were the editors asleep when they chose the other prize winners?

Eighth prize winning letter—Each ball represents an atom as it would appear under a powerful microscope. Mr. Camillo evidently still believes in the Daltonian hypothesis that matter is composed of solid atoms. The modern atom, my dear editors, is almost entirely empty and under a microscope would show a nucleus surrounded by a number of separate electrons, not a single solid body.

And the ninth prize winner—Electrons and protons rotating about each other? Any high school physics student will tell you that an electron is about 1840 times larger than a proton. Both the editors and Mr. Knoedinger are surely in need of the services of an optometrist.

And what I said about the eighth prize winner applies to all those who saw molecules on the cover. Any molecule is composed of several particles different in size. No molecule known to chemistry consists of one particle of matter as the fourth and tenth prize winners would have us believe. I suppose that had any one said that the cover represented a bunch of golf balls lost in the rough you would have also given him a prize. Golf balls are made in several colors you know.

The rest of the October issue was quite good, the cover being the best you've had in a long time. The illustration for "The Man of Stone" gave me quite a shock. It certainly was a surprise to see such a prosaic thing as a kitchen instead of the usual weird scenes pictured in the illustrations. And what's happening to Smith? His last two or three tales were not up to his usual standard. Perhaps he's been overworking his imagination.

Milton Kaletsky,
New York, N. Y.

(Mr. Kaletsky may remember that the terms of the July cover contest stated that although there was a scientific idea behind the cover, as drawn by Paul, that the prizes would be awarded for the best and most plausible explanations, *from a scientific standpoint*. The editors would be narrow-minded and perverse to insist that the prize winner state simply their own ideas.

Mr. Kaletsky's second criticism is that one prize winner stated that the balls represented atoms, and that according to science an atom is really empty space, with electrons revolving about protons. Mr. Kaletsky forgets that the electrons are revolving about the protons at a speed of more than 15,000 miles a second. Now just watch an airplane propeller rotating at several thousand R. P. M. and see if you can detect the empty spaces between the blades. Then visualize a speed of rotation of billions of R. P. M. and see if you can detect the empty spaces.

Mr. Kaletsky is also in error in stating that the electron is 1840 times as large as the proton. As a matter of fact the proton weighs 1840 times as much as the electron.

However, we are grateful for this criticism. We asked for it, and we got it in an intelligent form.—*Editor.*)

New Markets On New Worlds

Editor, WONDER STORIES:

Is this depression planet-wide? If so the discovery of ways to reach other planets would materially help in finding employment, in my opinion. The sooner we find other worlds to absorb our overproduction and surpluses in all nations, the sooner we will say goodbye to old man depression.

The Llano Co-operative colony seems to be solving the unemployment problem in their district.

Gilbert Hayman,
Waverly, N. S. W., Australia.

(Mr. Hayman's proposal has several disadvantages. Even if we found on Mars or Venus creatures who can wear shoes and clothing, and consume wheat and corn, shippers would probably find that the cost of transportation would be roughly 1,000 times the value of their products. We doubt, barring atomic energy, whether it would be profitable to ship anything less costly than radium to the moon or another planet.

Besides, why is it necessary to go to Mars for consumers? The United States has ten million unemployed men and women, who are consumers and are willing to consume if they be given the opportunity to produce.—*Editor*)

What Happens When We Get There

Editor, WONDER STORIES:

Let me be one of the first to commend Wesso on the new type, makeup, and cover—especially the cover. I have always claimed that Paul's creations, though somewhat startling, would be a real asset to the magazine if given the right colors and backgrounds. I am very glad to see that both have been seen to now. I pride myself that I am one of your oldest (not in age, thank you) readers, having in my possession one of the first copies of the original Gernsback publication, and since that time I have not missed an issue. I have witnessed the beginnings, the development and now the glory of our magazine, and today finds me as avid a reader as the first day I noticed a weird combination of colors at a newsstand and bought my first copy.

Now, Mr. Joe Kneers made an observation on interplanetary travel which calls for this letter. In the first place, those of us who are constant readers of science fiction no longer quibble about what goes on en route from planet to planet—at least I don't. Such experiences have been given time and again, and really limit themselves to five heads: meetings with meteors, the blackness of space with "its diamond points of stars," the effects of acceleration—positive and negative, weightlessness, and accounts of the manipulation of the ship itself.

To us old timers, space travel is an accomplished fact, and we are more interested in what happens after we get where we're going than in the old stuff, about how we got there, that we've read a hundred times.

Gerald E. Adams,
Wiley College,
Marshall, Texas.

(Mr. Adams is right in his statement of a point of view regarding interplanetary stories. We ask our authors to give our readers new conceptions of the meaning of interplanetary travels and to show the struggles of man against man and man against nature and space and on other worlds. In other words we ask our authors for new plots instead of new scientific themes.—*Editor*)

"Hi, Charley, I'm An Atom!"

Editor, WONDER STORIES:

I have just bought the October 1931 issue of Wonder Stories and as I always read the "Reader Speaks" first, the first thing I came to was in the first letter and the theory put forth was simply astounding. He really believes that it takes brains to stay in shape, as far as I can see! If iron didn't have brains (or consciousness, or whatever he means) iron wouldn't be able to stay iron!

"An Atomic Adventure" by William Lemkin in the Fall, 1930 QUARTERLY had the novel idea of atoms actually communicating with one another and even using modern slang! Of course it made the story more interesting and it was full of science—except for the idea which made it fiction. Even in the foreword of the story the editor asks why atoms can't communicate, or something. In the story the atoms had high hopes of communicating with man some day. Suppose they succeeded?

How would it be if suddenly while I am typing this letter I heard a tiny voice call out "Hi there, Charley, I'm an atom in your typewriting ribbon!" I don't believe inanimate substances actually have any kind of life, but I am broad-minded enough to admit the possibility of life existing in the minutest solar systems (atoms) of any substance. Just pure relativity.

"The Time Conqueror" by L. A. Eshbach was the best story (in my opinion) that you have published this year by far. Every word of it is logical, and all that has to be done to make the gist of the story come true is to keep a brain alive after it has been taken from the body and find a way of communication. It gave novel ideas of time travel. Personally I like to take the view of the story—that time is all-existent and that we are moving along it, and that time is not passing by at all. If you are standing on a railroad platform watching a long train go by and try to look at nothing but the passing train, you can very easily imagine that the

(Continued on page 544)

ON LETTERS

BECAUSE of the large number of letters we receive, we find it physically impossible to print them all in full. May we request our correspondents, therefore, to make their letters as brief and to the point as they can; as this will aid in their selection for publication? Whenever possible, we will print the letter in full; but in some cases, when lack of space prohibits publishing the complete letter, we will give a resume of it in a single paragraph.

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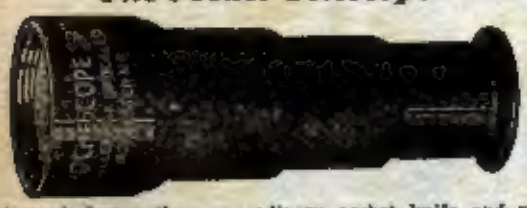

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THE READER SPEAKS

train is standing still and that you are the one that is moving. That is the same with time. Time-traveling and reincarnation are two of my favorite subjects for stories, and both of them came in this one. I cannot imagine that after we die it is the end of us forever. Probably we do not go to heaven and we may not be conscious of existing at all between lives.

Until science-fiction becomes a religion, I remain,

Charles D. Hornig,
Elizabeth, N. J.

(Naturally, we don't expect atoms to be able to speak English. As a matter of fact, the latest theory is that electrons, which are the building blocks of atoms are very contrary and undependable creatures, and don't entirely behave according to orthodox rules. So if electrons became vocal they would probably be disagreeable people to get along with.—*Editor.*)

War Still Rages

Editor, WONDER STORIES:

So war still rages in "The Reader Speaks." I have stood outside and watched it for some time. Now I wish to enter.

First let me state that I was a charter subscriber to both "Science Wonder" and "Air Wonder" and that I have read every issue of the QUARTERLY. I also read every issue of "Scientific Detective" or "Amazing Detective Tales."

Rapp's readers and admirers are legion but I rise to declare that his stories never have been worth the trouble to read. Keller is seldom good but he was very good in "The Conquerors" and "The Evening Star." Stanton A. Coblentz is the finest author that has ever contributed to your pages. I would like more by him. Ray Cummings wasn't very good in "The Great Transformation" but has been fine in the QUARTERLY. "The Final War" could have been much better. Still the greatest story you have published is "The Flying Legion." Can't you persuade the author to write a sequel to that story? Victor A. Endersby is seldom heard from or of, but both of his stories were gems. "Brood of the Helios" was splendid. It is all you said it would be.

When you were first talking of "Science Wonder Stories" I suggested that you publish stories by John Taine and Edmond Hamilton, then little known to the greater mass of science fiction readers. You have published stories by both and both are now famous.

I am sorry that the old science-religion-evolution argument has died down. It was most interesting. But, Mr. Editor, I imagine it was very embarrassing to you. Well, I won't be the one to bring it up. Woe to the one that does. Who can forget those harsh missives?

There is no reason why WONDER STORIES shouldn't be the best magazine of its type. What with editors like Mr. Gernsback and Mr. Brandt. The editors make the magazine.

Dale Mullen,
Topeka, Kansas.

(There are all kinds of war. Our kind is the intellectual battle of ideas. When those battles cease to rage in our columns, we will know that our readers are no longer interested in our magazine. We will then retire on a pension to a home for the aged.—*Editor.*)

Sold On It

Editor, WONDER STORIES:

My latest copy of WONDER STORIES is the September issue. The only story of interest to me was "Martian Depths" which was, to say the least, good. Surely, Mr. Dahl Juve is to be complimented. However, in the August issue, there are more stories worth praising. The best being "Space Coffin" showing some very bizarre happenings. I have always liked A. Rowley Hilliard, as an author. He seems to write the hits. Every time I see you are publishing one of his stories, I am sold on that issue.

George Beattie has completely changed his style, in "Platinum Planets," from "The Man Who Shrank." This, I think, is why I like his "Platinum Planets," and his writing in general. I did not, however, like "Flight Into Super Time," mostly, because I do not like any of Clark Ashton Smith's offerings. He assumes too much. "Tyrant of The Red World" is the first

It's The "New Thing" In Pens

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THE READER SPEAKS

(Continued from page 543)

story I have ever read by Richard Tooker, and I am pleased with it. The three part story by the German author, Hanstein, becomes increasingly interesting, although I do not welcome serials, as one loses interest in the story before the next publication is out.

Some authors I wish to see more frequently are: Fletcher Pratt, Arthur Stangland, and A. Rowley Hillard, to whom I have already given praise.

Paul N. O'Brien,
Erie, Pa.

(Those who like the German style of science fiction will be delighted with "Interplanetary Bridges" by Ludwig Anten, which will appear in the Winter Quarterly. It's really marvelous and none of our readers should miss it.—*Editor*)

SCIENCE QUESTIONS AND ANSWERS

(Continued from page 541)

sees only planes or surfaces, authors reason that since we are three-dimensional there must be a fourth dimension that sees us as three-dimensional beings. The only representation of that fourth dimension is obtained by projecting in every direction from a three-dimensional body into what is called kyper-space. If we are to use as our three-dimensional body a cube, the fourth dimensional body would be called a "tesseract," and is shown herewith.

Naturally it is all hypothetical, and is based merely on extending our known world one more step. We cannot say that such a fourth dimension does not exist. We can merely say that we cannot apprehend it with our senses.—*Editor.*)

Book Reviews

THE CAUSES OF EVOLUTION by J. B. S. Haldane, 234 pages, stiff cloth covers, size 5½x8. Published by Harper & Bros., New York. Price $2.50.

Professor Haldane has been described as "a man who writes as well as Wells, who has ten times the novelist's scientific information, whose mind is more balanced and acute, whose scientific imagination is far more original and startling." Those who have read his former books can readily agree with this. Now Professor Haldane turns his attention to the fascinating problem of the causes of evolution. This question is one of the most hotly debated in all biology. Men talk glibly about "natural selection" and "the struggle for survival" but when they are asked just what happens to species to make many diverse types, the biologist is baffled.

Professor Haldane offers first in this book a history of the evolutionary idea; then studies the working of natural selection and adds his own theory as to how evolution occurs. His belief is that evolution can be explained "in terms of the capacity for variation of individual organisms, and the selection exercised upon them by their environment." This theory seems to be a compromise between that of Lamarck who said boldly that our necks grow longer because we want them to; and the cold natural selection theory of Darwin.

The book is quite readable, and as is always the case with Haldane, very stimulating.

THE SCIENTIFIC DREAM BOOK, by Jonathan B. Westerfield, 300 pages, stiff cloth covers size 5½x8¼. Published by Brewer, Warren, and Putnam, New York. Price $2.50.

Westerfield is the pseudonym of a well-known psychologist and a newspaperman. He has attempted in this book to gather together the known facts about dreams and their interpretations. The various causes of dreams, famous dreams of history, the mental states that cause dreams, are included in the introductory chapters. The greater part of the book is a list of the various dreams and the author's opinion as to their meaning. No type of dream can fail to be explained by reference to this list. Unfortunately the author spoils his scientific detachment when explaining dreams by attempting to moralize over them.

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